United States Department of the Interior
Bureau of Land Management

Farmington Field Office

Final

Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Farmington Field Office – New Mexico Volume 2: Proposed Riparian and Aquatic Habitat Management Plan

August 2000

BLM/NM/PL-00-009-1040

Mission Statement

It is the mission of the U.S. Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NM/PL-00-009-1040

ABSTRACT

This U.S. Bureau of Land Management (BLM) Farmington Field Office Riparian and Aquatic Habitat Management Plan (HMP) presents an adaptive management strategy for restoring and protecting riparian areas administered by the Farmington Field Office. Riparian habitats are critical, but very small, areas in relation to the large amount of land administered by the BLM. Riparian areas under BLM jurisdiction are often only small segments of a larger area over which the BLM has no management responsibility or authority. The BLM plays an important, but limited, role in improving and protecting riparian habitats in New Mexico.

The HMP presents a sequence of tasks for individual riparian areas that, when implemented, will provide a systematic method of achieving proper functioning condition (PFC) and the protection and long-term stewardship of threatened and endangered species habitat.

Although the BLM has been implementing restoration and protective actions for selected riparian areas in New Mexico for over a decade, development of measurable goals and endpoints for restoration activities has not been undertaken because of informational and planning needs. For example, additional scientific data for riparian habitats will be obtained and utilized, and proactive strategies for accomplishing riparian-wetland management objectives will be developed and implemented in the HMP. The HMP assigns highest priority to implementing those management practices identified in current BLM management guidance as restoring and protecting all riparian habitats under BLM jurisdiction. For riparian areas, the HMP requires a specific focus on riparian management; decisions regarding other land management activities will be constrained to limit or prevent any adverse impact on riparian areas.

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ABBREVIATIONS/ACRONYMS

ACEC	area of critical environmental concern
AUM	animal unit month
BLM	U.S. Bureau of Land Management
DEIS	draft environmental impact statement
EIS	environmental impact statement
FAR	functional – at risk
FEIS	final environmental impact statement
HMP	habitat management plan
MOU	memorandum of understanding
NMDG&F	New Mexico Department of Game and Fish
NF	nonfunctional
PFC	proper functioning condition
TR	technical reference
U	unknown
VFW	Veterans of Foreign Wars
USFWS	U.S. Fish and Wildlife Service

1 INTRODUCTION

1.1 REASONS FOR PREPARATION

The purpose of this Habitat Management Plan (HMP) is to provide guidance for the restoration and protection of riparian habitats under the jurisdiction of the U.S. Bureau of Land Management (BLM) in the Farmington Field Office, New Mexico. The goal of riparian-wetland area management is to maintain, restore, improve, protect, and expand these areas so that they are in proper functioning condition for their productivity, biological diversity, and sustainability. Although the BLM has been actively managing riparian habitats in pursuit of this goal for over a decade, the need to place special emphasis on these important resources was triggered by legal action against the BLM. The lawsuit was settled when the BLM agreed to complete an Environmental Impact Statement (EIS) for Riparian and Aquatic Habitat Management in the Farmington Field Office, including this HMP.

Riparian habitats constitute a small, but critical, percentage of lands administered by the BLM in New Mexico. Figures 1.1 through 1.4 illustrate the riparian habitats under BLM jurisdiction in the context of the total surface lands contained within, and administered by, the Farmington Field Office.

Figure 1.1 shows the location of the jurisdictional boundaries of the Farmington Field Office in relation to the rest of New Mexico; Figure 1.2 shows the distribution of riparian habitats under the jurisdiction of the BLM in the Farmington Field Office; Figure 1.3 shows the major physiographic features in the Farmington Field Office area; and Figure 1.4 shows the management jurisdiction of land areas in the Farmington Field Office.

1.2 ECOSYSTEM DESCRIPTIONS

Riparian-wetland areas are some of the most productive resources found on both public and private lands (BLM 1998a). They are highly prized for their recreation, fish and wildlife, water supply, cultural and historic values, and economic values (e.g., their use for livestock production, timber harvest, and mineral extraction).

The U.S. Army Corps of Engineers, which has jurisdictional authority over certain activities in wetlands, defines wetlands as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and which, under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (BLM 1992c). The BLM Technical Reference (TR) 1737-7 (BLM 1992c) definition of wetland includes marshes, shallow swamps, shores of lakes, bogs, muskegs, wet meadows, estuaries, and riparian areas.

BLM TR 1737-7 (BLM 1992c) further defines riparian areas as a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Sites such as ephemeral streams or washes that do not exhibit the presence of vegetation that depends on free water in the soil are excluded.

In a healthy riparian system, four primary elements (soil, water, vegetation, and landform/

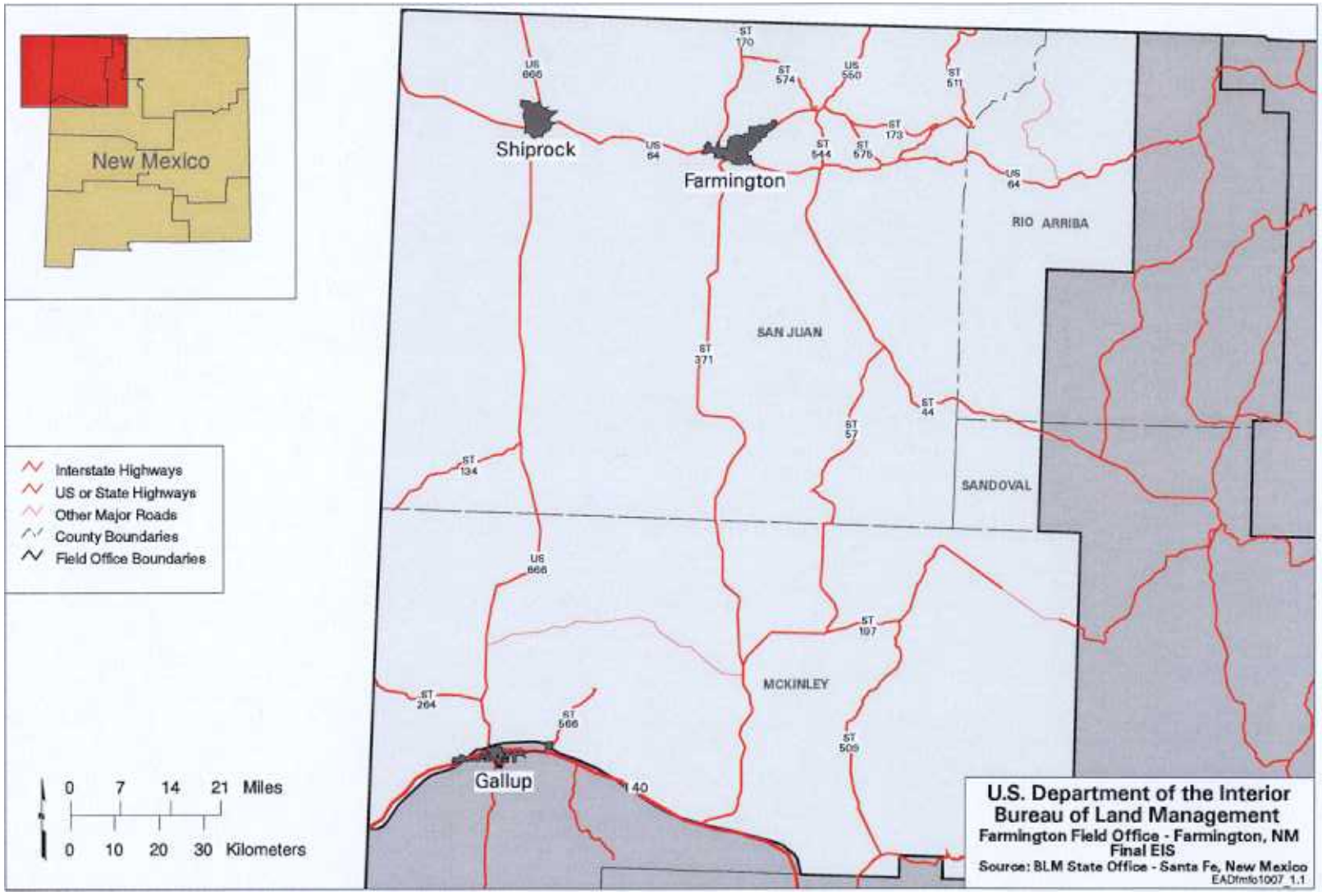


FIGURE 1.1 Counties, Communities, and Roads in the Farmington Field Office Area

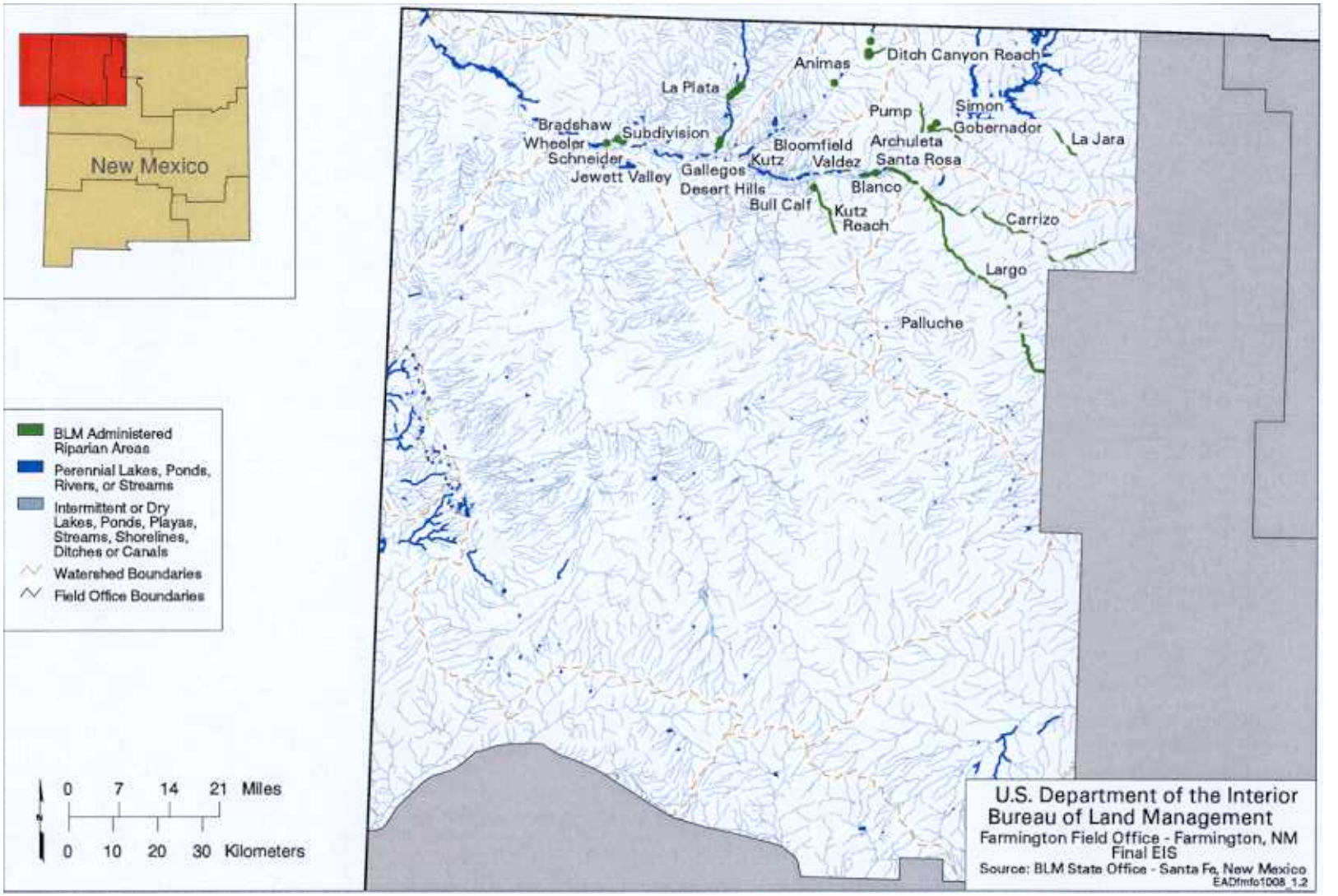


FIGURE 1.2 Riparian Areas under the Jurisdiction of the Farmington Field Office

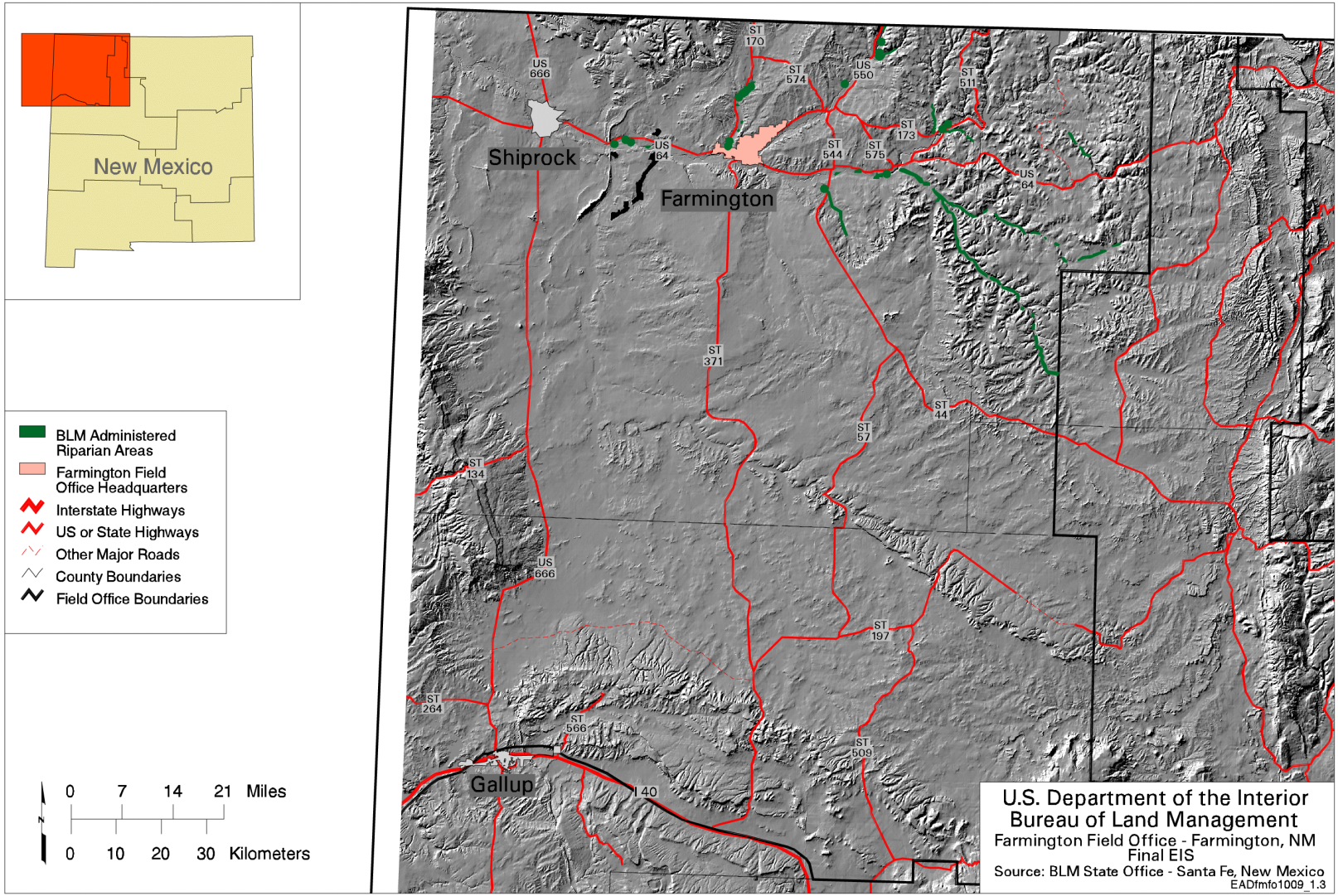


FIGURE 1.3 Major Physiographic Features in the Farmington Field Office Area

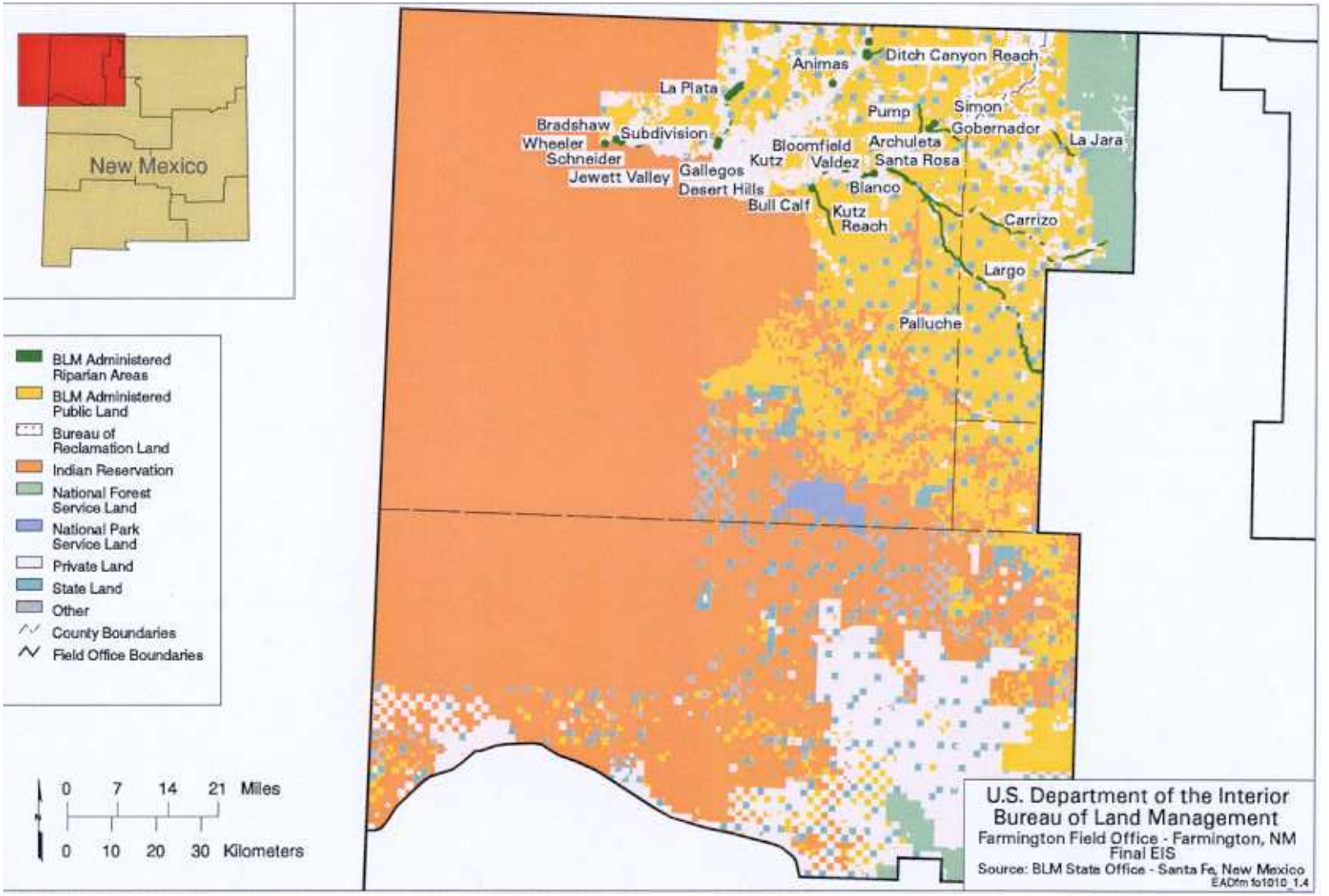


FIGURE 1.4 Land Status in the Farmington Field Office Area

geology) are in balance and mutually support one another. Although all four elements are important, water and soil are the fundamental elements that define riparian areas, while vegetation reflects the nature and condition of the soil and moisture conditions. Vegetation is often the most controllable element; it is usually the easiest to manipulate and generally responds most quickly to human influence, use, and actions.

In addition to site-dependent vegetation, the nature and condition of the riparian area immediately adjacent to a stream channel fundamentally affect the local aquatic ecosystem, and when necessary, steps to maintain, improve, or restore the conditions needed to support the long-term health of these communities are prudent.

The health of a riparian area is judged by its function, capabilities, and relative potential, with the objective of maintaining or achieving a long-term, properly functioning condition. Riparian habitats are classified by the BLM (BLM 1998a) with one of the following four ratings: (1) Proper Functioning Condition (PFC); (2) Functional – at Risk (FAR); (3) Nonfunctional (NF); and (4) Unknown (U). These ratings are affected by the local geology, soils, water regime, vegetation, and, in some cases, external "nonsystem"-related factors (e.g., high flows in adjacent surface water produced by dam operations or high sediment loads from upstream mining activities). In addition, a trend (upward, downward, or not apparent [i.e., static]) is assigned to each riparian habitat that is classified as FAR. An upward trend indicates that the riparian habitat has been improving over time; a downward trend indicates that conditions of the habitat have been deteriorating over time; and a not apparent trend indicates that no changes in the condition of the riparian habitat have been occurring over time.

A riparian area is judged as being in PFC when there is adequate vegetation, stream bends (sinuosity), and, in some cases, large woody debris present to:

- Dissipate stream energy associated with high water flows, thereby reducing erosion and maintaining acceptable water quality;
- Filter sediment, capture bed load, and aid in floodplain/stream channel development;
- Improve water retention and groundwater recharge;
- Develop root masses capable of stabilizing stream banks against erosion (cutting);
- Develop diverse ponding and channel characteristics that provide suitable water depth, duration, temperature, and habitat for aquatic and nonaquatic fauna; and
- Support greater biodiversity (BLM 1998a).

Riparian areas that are specified as FAR are functional, but an existing soil, water, or vegetation attribute makes them susceptible to degradation. Riparian areas classified as NF are clearly not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, or properly performing other functions. Riparian areas are classified as U when there is insufficient information for managers to make any determination of their condition (BLM 1998a).

The remainder of Section 1 describes the river tracts, ephemeral streams, and riparian and wetland areas within the jurisdiction of the Farmington Field Office. Table 1.1 summarizes the existing situation regarding riparian areas under BLM jurisdiction in the Farmington Field Office.

1.2.1 River Tracts

Thirty river tracts and portions of nine ephemeral stream reaches contain riparian areas that are under the jurisdiction of the Farmington Field Office. Although the tracts encompass a total of 2,253 acres, the associated riparian areas cover only 444.5 acres of that total. Each of the riparian river tracts is discussed below; ephemeral streams are discussed in Section 1.2.2.

1.2.1.1 Animas 1 Tract

The Animas 1 Tract (Figure 1.5) occupies 81 acres. The tract lies along 0.37 mile of the Animas River and contains about 15 acres of riparian habitat. The mesic areas (areas in which the soils are moderately wet) on both sides of the river support stands of willow. These willows are 6 to 12 feet tall. Outside of the willow stands, cottonwoods dominate the overstory. These cottonwoods range in height from 30 to 60 feet and have a canopy cover of about 30 to 60%. The best potential short-term (1 to 3 years) southwestern willow flycatcher habitat (BLM 1998b) within this tract is an area of about 2 acres located adjacent to an old channel. This area is dominated by willows that are 6 to 9 feet tall.

The Animas 1 Tract is not within a grazing allotment; however, the entire river tract has been trespass grazed on both sides of the river. As of July 1998 (BLM 1998c), the area had a PFC rating with an upward trend because of the removal of trespass livestock. (Although the BLM normally does not assign a trend to ratings other than FAR, the Farmington Field Office often assigns trends to both PFC and NF riparian tracts to provide a more complete description).

1.2.1.2 Animas 3 Tract

The Animas 3 Tract occupies about 113 acres along about 0.37 mile of the Animas River (Figure 1.5). The Animas River forms an oxbow on the tract that has a riparian area of about 7 acres. About 1 acre of a delta is dominated by willows with heights of 6 to 12 feet. The northern side of the river contains about 6 acres of riparian habitat. A band of willows grows at the edge of the water. These willow also are 6 to 12 feet tall. The riparian vegetation is expected to provide potential short-term (1 to 3 years) southwestern willow flycatcher habitat (BLM 1998b).

As with the Animas 1 Tract, this tract is not part of a grazing allotment, but both sides of the river receive excessive trespass grazing. In addition to trespass grazing, about 4 acres of the riparian area on the northern side of the river is trespass farmed. This farming has introduced a heavy infestation of Canada thistle and Russian knapweed. As of July 1998 (BLM 1998c), this tract was rated as FAR with a downward trend because of trespass problems.

1.2.1.3 Animas 8 Tract

The Animas 8 Tract (Figure 1.5) occupies about 40 acres. The tract has about 4 acres of riparian habitat along 0.15 mile of Animas River frontage. The riparian portion of this tract is small because the bank rises steeply from the edge of the water and continues to a mesa about 90 feet from the river. An irrigation ditch runs along the western bank of the river. The land west of the ditch rises sharply to the top of the

TABLE 1.1 Farmington Field Office Riparian Areas

Riparian Area	Length in Miles (Area in Acres)	Type	Current Use[a]	Existing Problems[b]	Threatened and Endangered Species[c] (Priority Number)	Condition[d] (Date)	General Management Plans[e]	Site-Specific Management Actions[f]
Animas River								
Tract 1	0.62 (15)	River tract	NAG	Trespass grazed	PST SWF (2)	PFC -U (1998)	1, 2, 7	NCM
Tract 3	0.37 (7)	River tract	NAG	Trespass grazed	PST SWF (3)	FAR - D (1998)	1, 2, 7	NCM
Tract 8	0.15 (4)	River tract	NAG	NPI	PLT SWF (15)	FAR - D (1998)	1, 2, 7	NCM
San Juan River								
Archuleta	0.1 (3)	River tract, small seep	Allotted	NPI	PLT SWF (23)	PFC - NA (1998)	1, 2, 7	NCM
Blanco	0.67 (75)	River tract	DSG	NPI	5 ac. PST SWF (1)	PFC (1998)	1, 2, 7	NCM
Bloomfield	0.38 (10)	River tract	NAG	NPI	PLT SWF (8)	FAR - U (1998)	1, 2, 7	Partial fence
Bradshaw	0.75 (7)	River tract	3 cows authorized 7/1-10/31	Trespass grazed	Currently potential SWF	FAR - U (1998)	1, 2, 7	Incomplete perimeter fence
Bull Calf	0.35 (40)	River tract	NAG	Trespass grazed	PLT SWF (3)	FAR - U (1998)	1, 2, 7	NCM
Desert Hills	0.38 (5)	River tract	No grazing allowed in riparian area	NPI	PLT SWF (26)	PFC - NA (1998)	1, 2, 7	NCM
Gallegos	0.86 (20)	River tract	NAG	Severe trespass grazing	PLT SWF (2)	FAR (1994)	1, 2, 7	NCM
Jewett Valley	0.48 (5)	River tract	NAG	Severe trespass grazing	PLT SWF (11)	PFC - NA (1998)	1, 2, 7	NCM
Kutz	0.86 (5)	River tract	NAG	NPI	PLT SWF (9)	FAR - D (1998)	1, 2, 7	Fences on N. and E; 11.5 ac. planted
La Plata River Tract	0.38 (5)	River tract	NAG	Trespass grazed	PST SWF migration, PLT SWF nesting (25)	PFC - NA (1998)	1, 2, 7	NCM

TABLE 1.1 (Cont.)

Riparian Area	Length in Miles (Area in Acres)	Type	Current Use[a]	Existing Problems[b]	Threatened and Endangered Species[c] (Priority Number)	Condition[d] (Date)	General Management Plans[e]	Site-Specific Management Actions[f]
La Plata River								
Tract 1	0.48 (6)	River tract	DSG	Trespass grazed	PLT SWF (10)	FAR (1994)	1, 2, 7	NCM
Tract 2	0.2 (5)	River tract	DSG	Trespass grazed	PLT SWF (16)	FAR (1994)	1, 2, 7	NCM
Tract 3	0.12 (2)	River tract	DSG	Trespass grazed	PLT SWF (22)	FAR (1994)	1, 2, 7	NCM
Tract 4	0.38 (5)	River tract	DSG	Trespass grazed	PLT SWF (17)	FAR (1994)	1, 2, 7	Fenced, but in poor repair
Tract 5	0.08 (3)	River tract	DSG	Trespass grazed	PLT SWF (20)	FAR (1994)	1, 2, 7	Fenced, but in poor repair
Tract 6	0.33 (12)	River tract	DSG	NPI	PLT SWF (18)	FAR (1994)	1, 2, 7	NCM
Tract 7	0.43 (20)	River tract	NAG	Trespass grazed	PLT SWF (19)	FAR (1994)	1, 2, 7	NCM
Tract 8	0.48 (8)	River tract	NAG	NPI	PLT SWF (21)	PFC (1998)	1, 2, 7	NCM
Tract 9	0.25 (6)	River tract	NAG	NPI	PLT SWF (28)	FAR (1994)	1, 2, 7	NCM
Tract 10	0.15 (0.5)	River tract	NAG	NPI	PLT SWF (27)	PFC (1998)	1, 2, 7	NCM
Pump Canyon								
Reach 1	1.57 (18)		DSG	NPI	PLT SWF (6)	FAR	1, 3, 7	NCM
Reach 2	1.24 (20)		DSG	NPI	PLT SWF (4)	PFC	1, 3, 7	NCM
Reach 3	1.04 (15)		DSG	NPI	PLT SWF (5)	FAR	1, 3, 7	NCM
Reach 4	1.2 (10)		DSG	NPI	PLT SWF (7)	FAR	1, 3, 7	NCM

TABLE 1.1 (Cont.)

Riparian Area	Length in Miles (Area in Acres)	Type	Current Use[a]	Existing Problems[b]	Threatened and Endangered Species[c] (Priority Number)	Condition[d] (Date)	General Management Plans[e]	Site-Specific Management Actions[f]
San Juan River								
Santa Rosa	0.24 (4)	River tract	NAG	Trespass grazed	PLT SWF (14)	FAR - Static (1998)	1, 2, 7	NCM
Schneider	0.24 (3)	River tract	NAG	Trespass grazed	PLT SWF (12)	PFC - NA (1998)	1, 2, 7	NCM
Simon Canyon	1.86 (25)	River tract	NAG	NPI	PLT SWF (24)	PFC - NA (1998)	1, 4, 7	NCM
South Bloomfield								
N. Bank	0.62 (30)	River tract	NAG	NPI	PLT SWF (1)	PFC - NA (1998)	1, 2, 7	NCM
S. Bank	0.62 (11)	River tract	NAG	NPI	Not suitable SWF	PFC - NA (1998)	1, 2, 7	NCM
Subdivision	0.76 (4)	River tract	NAG	NPI	PST SWF migration (5), Marginal SWF nesting	PFC - NA (1998)	1, 2, 7	NCM
Valdez	0.76 (60)	River tract	NAG	Heavy trespass grazed and recreational use	PST SWF (4)	FAR - NA (1998)	1, 2, 7	NCM
Wheeler	0.28 (2)	River tract	NAG	Trespass grazed	PLT SWF (13)	PFC - D (1998)	1, 2, 7	NCM
Blanco Reach	0.75	Ephemeral stream	DSG	NPI	NPS	FAR - Static	1, 6	NCM
Carrizo Canyon								
Reach 1	10.8	Ephemeral stream	DSG	NPI	NPS	FAR - U	1,6	NCM
Reach 2	1	Ephemeral stream	DSG	NPI	NPS	NF - D	1, 6	NCM
Reach 3	3	Ephemeral stream	DSG	NPI	NPS	NF - D	1, 6	NCM
Reach 4	1	Ephemeral stream	DSG	NPI	NPS	FAR - U	1, 6	NCM
Reach 5	1	Ephemeral stream	DSG	NPI	NPS	NF - U	1, 6	NCM
Reach 6	0.75	Ephemeral stream	DSG	NPI	NPS	FAR - Static	1, 6	NCM

TABLE 1.1 (Cont.)

Riparian Area	Length in Miles (Area in Acres)	Type	Current Use[a]	Existing Problems[b]	Threatened and Endangered Species[c] (Priority Number)	Condition[d] (Date)	General Management Plans[e]	Site-Specific Management Actions[f]
Reach 7	0.5	Ephemeral stream	Proposed decision on DSG has been protested	NPI	NPS	FAR - U	1, 6	NCM
Reach 8	5.2	Ephemeral stream	Proposed decision on DSG has been protested	NPI	NPS	NF - Static	1, 6	NCM
Ditch Canyon								
Reach 1	4	Ephemeral stream	DSG	NPI	NPS	FAR - Static	1	NCM
Gobernador Canyon								
Reach 1	1	Ephemeral stream	DSG	NPI	NPS	FAR - U	1	NCM
Reach 2	3.2	Ephemeral stream	DSG	NPI	NPS	FAR - U	1	NCM
Kutz Canyon								
Reach 1	4	Ephemeral	NAG	NPI	NPS	FAR - Static	1	NCM
Reach 2	2	Ephemeral	DSG	NPI	NPS	FAR-D	1	NCM
La Jara Canyon								
Reach 1	0.5	Ephemeral stream	DSG	NPI	NPS	NF - D	1	NCM
Reach 2	1.5	Ephemeral stream	DSG	NPI	NPS	NF - U	1	NCM
Reach 3	2	Ephemeral stream	DSG	NPI	NPS	NF - Static	1	NCM
Reach 4	1.2	Ephemeral stream	DSG	NPI	NPS	NF - Static	1	NCM
Largo Canyon								
Reach 1	4	Ephemeral stream	DSG	NPI	NPS	FAR - Static (1994)	1, 6	NCM
Reach 2	0.75	Ephemeral stream	DSG	NPI	NPS	FAR - Static (1994)	1, 6	NCM
Reach 3	1	Ephemeral stream	DSG	NPI	NPS	NF - D (1994)	1, 6	NCM
Reach 4	7	Ephemeral stream	DSG	NPI	NPS	FAR - U (1994)	1, 6	NCM

TABLE 1.1 (Cont.)

Riparian Area	Length in Miles (Area in Acres)	Type	Current Use[a]	Existing Problems[b]	Threatened and Endangered Species[c] (Priority Number)	Condition[d] (Date)	General Management Plans[e]	Site-Specific Management Actions[f]
Reach 5	2.7	Ephemeral stream	DSG	NPI	NPS	FAR - U (1994)	1, 6	NCM
Reach 6	4	Ephemeral stream	DSG	NPI	NPS	FAR - U (1994)	1, 6	NCM
Reach 7	3.5	Ephemeral stream	DSG	NPI	NPS	FAR - U (1994)	1, 6	NCM
Reach 8	6	Ephemeral stream	Proposed decision on DSG has been protested	NPI	NPS	NF - D (1994)	1, 6	NCM
Reach 9	3	Ephemeral stream	DSG	NPI	NPS	NF - U (1994)	1, 6	NCM
Reach 10	5	Ephemeral stream	DSG	NPI	NPS	FAR - Static (1994)	1, 6	NCM
Palluche Canyon								
Reach 1	2.5	Ephemeral stream	DSG	NPI	NPS	NF - Static	1, 5, 6	NCM
Reach 2	1.5	Ephemeral stream	DSG	NPI	NPS	NF - Static	1, 5, 6	NCM
Reach 3	5	Ephemeral stream	NAG	NPI	NPS	FAR - U	1, 5, 6	NCM
Reach 4	7.5	Ephemeral stream	NAG	NPI	NPS	NF - D	1, 5, 6	NCM
Reach 5	2.5	Ephemeral stream	NAG	NPI	NPS	FAR - D	1, 5, 6	NCM
Simon Canyon	4.0	Ephemeral stream	NAG	NPI	NPS	NF - Static	1, 4	NCM
Carrizo Oxbow	(15)	Wetland	DSG	NPI	NPS	PFC - NA (1998)	1, 6	NCM

See Next Page for Footnotes.

TABLE 1.1 (Cont.)

[a] DSG = dormant season grazing; NAG = no authorized grazing.

[b] NPI = no problem identified to date.

[c] NPS = no priority status identified to date; PST = potential short-term habitat; PLT = potential long-term habitat; SWF = southwestern willow flycatcher.

[d] D = downward trend; FAR = functional-at risk; NA = no apparent trend; NF = nonfunctional; PFC = proper functioning condition; U = upward trend.

[e] 1 = *Farmington Resource Management Plan* (BLM 1988).

2 = *San Juan River Habitat Management Plan* (BLM 1987).

3 = *Pump Canyon Riparian Activity Plan* (BLM 1993d).

4 = *Simon Canyon Final Recreation Area and Management Plan* (BLM 1984).

5 = *Palluche Canyon Riparian Activity Plan, Farmington, New Mexico* (BLM 1993b).

6 = *Lower Largo Canyon Watershed Management and Erosion Control Plan Final* (BLM 1997b).

7 = *Southwestern Willow Flycatcher Habitat Management Plan* (BLM 1998b).

[f] NCM = no current management actions identified.

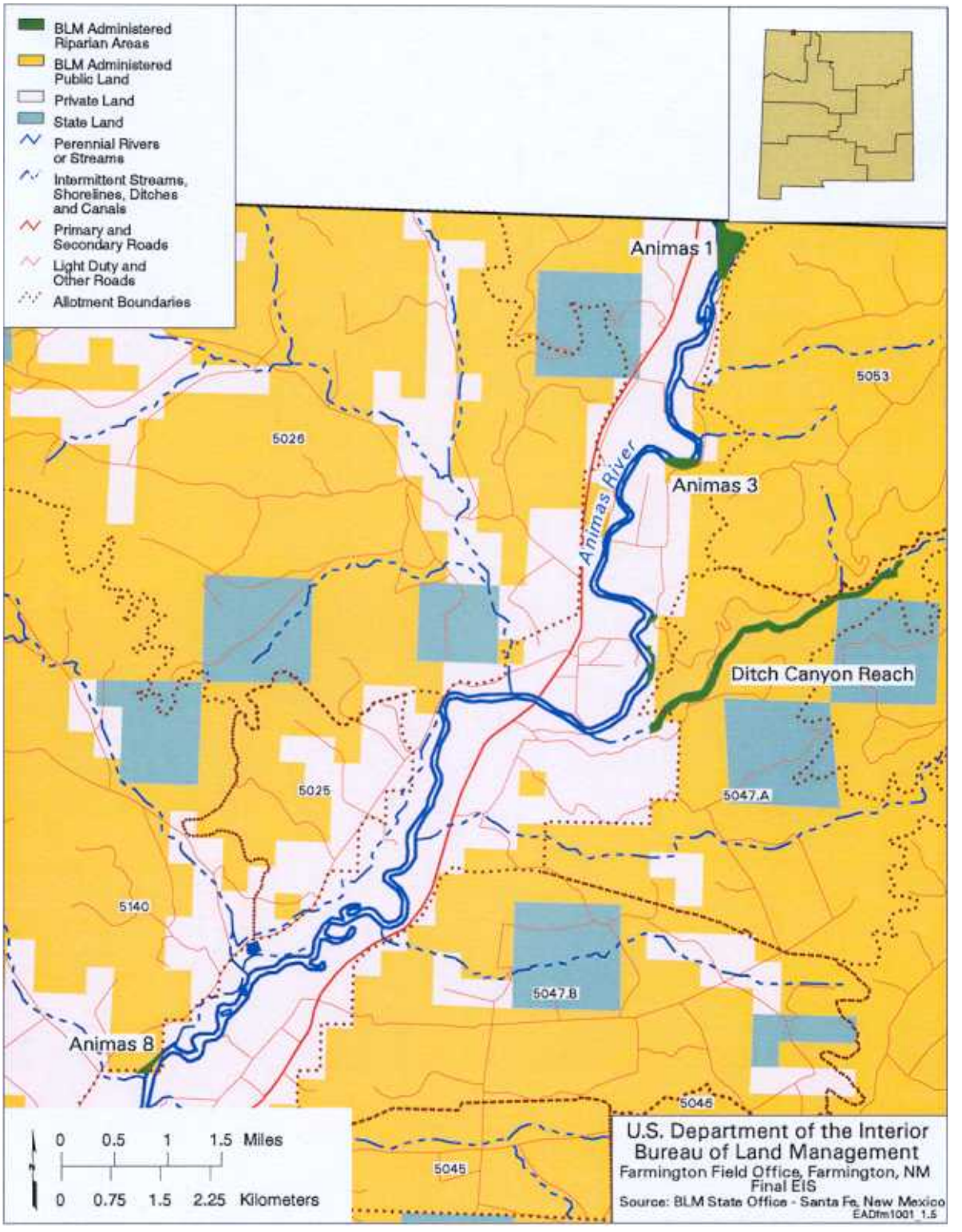


FIGURE 1.5 Animas and Ditch Canyon Riparian Areas

mesa. The land between the ditch and the river is 6 to 9 feet above the river and may be too dry to support dense riparian vegetation. The bank of the irrigation ditch and most of the riparian area on the western bank of the Animas River are heavily infested with Russian knapweed. Some large cottonwoods occur along the ditch, but the trees do not form a continuous overstory.

The extreme southern portion of the riparian area on the western bank contains some healthy populations of willows 9 to 12 feet tall. However, this population is very close to the southern boundary of the tract, and part of it may be on private property. No boundary fence or boundary markings of any kind are present on the southern edge of the tract. The extreme southeastern corner of the tract extends to the eastern side of the river. This corner contains less than 1 acre of riparian area and is not marked by a boundary fence. The vegetation is a mixture of saltcedar and willow, with a few scattered cottonwoods. The willow/saltcedar complex is about 9 to 12 feet tall. This area is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

Cattle grazing is not allowed on the Animas 8 Tract. As of July 1998 (BLM 1998c), the tract had a FAR rating with a downward trend. The irrigation ditch may be contributing to unacceptable conditions on the tract.

1.2.1.4 Archuleta River Tract

The Archuleta River Tract (Figure 1.6) is located about 9 miles downstream from the town of Navajo Dam and has been specified for fisherman access and parking. The tract occupies 42 acres and contains about 3 acres of riparian habitat with about 0.1 mile of river frontage. The riparian habitat is split by an irrigation diversion channel. North of the channel, 2 acres of riparian vegetation are located between the channel bank and a sandstone bluff. This area has about 15 scattered mature cottonwoods with an understory that is about 9 feet tall. A small spring or seep located under the sandstone bluff provides water to support about 0.2 acre of cattails and New Mexico olive. This stand grows about 9 to 12 feet tall. No willows grow on the northern bank.

The southern bank of the diversion channel forms part of an island between the diversion and the river channel. About 1 acre of riparian habitat exists on the island. Some scattered willows grow on the island to a height of about 6 feet. Numerous young Russian olive trees are becoming established on the island. Saltgrass provides a nearly continuous cover under the Russian olive trees. A few scattered patches of saltcedar/Russian olive vegetation occur on the island to heights of about 9 to 12 feet.

The Archuleta River Tract is part of Allotment No. 05044, but there is no sign of livestock grazing activity in the riparian areas. This tract is heavily used by recreational fishermen. Trails for fishermen have not been officially established, but trails are being created by use, and they are increasing in number, width, and impact. The tract may provide some marginal long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

As of July 1998 (BLM 1998c), the Archuleta River Tract had a PFC rating with no apparent trend.

1.2.1.5 Blanco River Tract

The Blanco River Tract, located on the San Juan River, has an area of 200 acres with 0.67 mile of river frontage and 75 acres of riparian habitat (Figure 1.7). Vegetation along the river bank is dominated by saltcedar and Russian olive trees. A band of saltcedar and

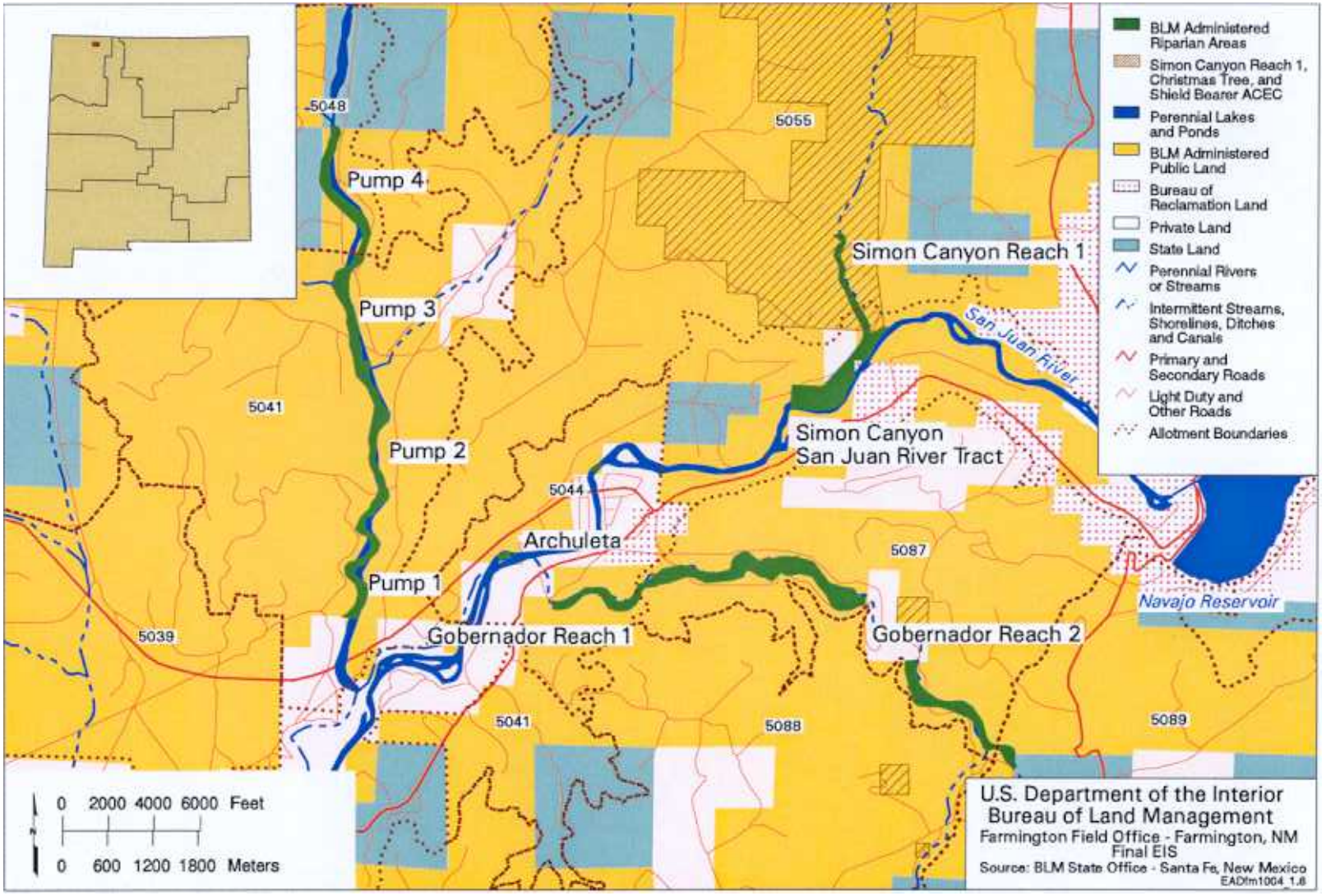


FIGURE 1.6 Archuleta, Pump Canyon, Simon Canyon, and Gobernador Riparian Areas

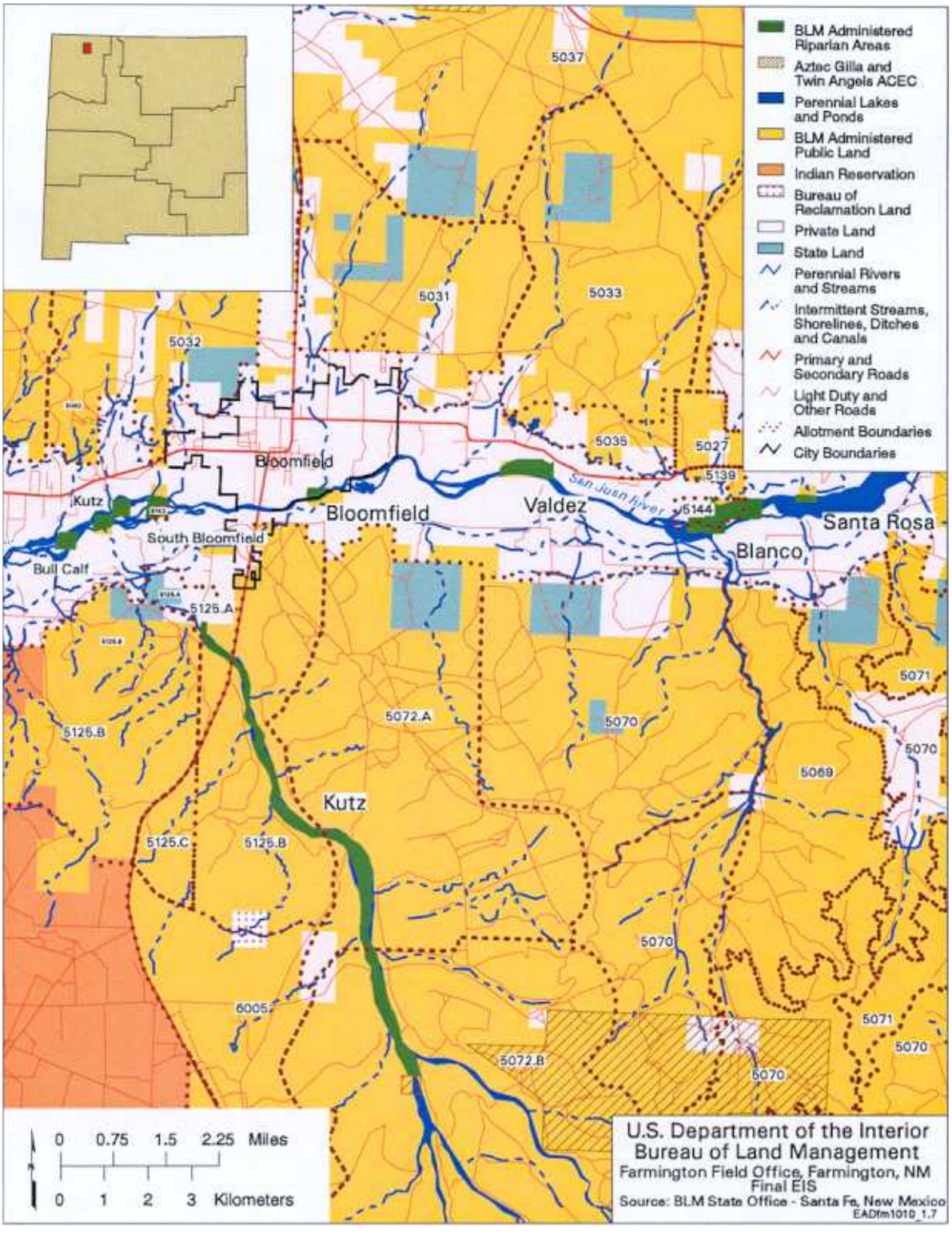


FIGURE 1.7 Blanco, Bloomfield, Valdez, Santa Rosa, and Kutz Canyon Riparian Areas

Russian olive trees extends an average of 60 to 90 feet from the water's edge. This vegetation reaches a height of 9 to 18 feet. An open cottonwood woodland extends about 900 feet on the northern bank.

A wetland on the northern portion of the tract extends from east to west between the open woodland and a ridge of bluffs. This wetland extends about 0.6 mile through the tract and continues onto private lands to the west.

Part of the Blanco River Tract is within Allotment No. 05144. This allotment includes 273 acres of BLM and private land. The tract also receives a limited amount of recreational activity from river rafters and hunters.

The Blanco River Tract provides a total of about 5 acres of potential short-term (1 to 3 years) southwestern willow flycatcher habitat (BLM 1998b). However, most of this habitat is impacted by unauthorized livestock grazing practices. As of July 1998 (BLM 1998c), the tract had a PFC rating.

1.2.1.6 Bloomfield Tract

The Bloomfield Tract (Figure 1.7) has a total of 80 acres of land, with about 10 acres of riparian vegetation and about 0.38 mile of San Juan River frontage. The southern bank of the river quickly rises into a bluff that does not have any riparian vegetation suitable for the southwestern willow flycatcher. A small river channel creates a small island of about 7 acres. The vegetation on this island is dominated by Russian olive trees and saltcedar. The vegetation is about 12 to 18 feet tall. Some willows also grow along the river channel, but these willows are only 3 to 6 feet tall. The northern bank supports dense stands of Russian olive trees. These stands are about 12 to 18 feet tall. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

No grazing is authorized on this tract. On the northern bank, a fence follows the contours of the river about 30 to 45 feet from the river's edge. This fence separates land administered by the BLM and private land. The southern bank is not protected by a fence. The island has no sign of livestock grazing. This tract receives very light recreational use from hunters in the fall and winter. San Juan River flow regulations contribute to unacceptable conditions (e.g., bank erosion) in this area.

As of July 1998 (BLM 1998c), the Bloomfield Tract had a FAR rating with an upward trend.

1.2.1.7 Bradshaw Tract

The Bradshaw Tract (Figure 1.8) occupies about 90 acres and has about 0.75 mile of river frontage and about 7 acres of riparian habitat. The extreme eastern portion of the tract contains about 1 acre of patchy willows. Russian olive trees, some 15 to 18 feet tall, have invaded the tract. Some mature cottonwoods are growing around the perimeter of the willow stand and provide a canopy cover of 20%. This tract has been classified as a currently potential habitat for the southwestern willow flycatcher (BLM 1998b).

The Bradshaw Tract lies within Allotment No. 05133. This allotment authorizes grazing by 12 animal unit months (AUMs) from July 1 to October 31; however, the allotment has not been grazed for the past 3 years. This allotment may be altered to withdraw this tract from grazing in accordance with the *Southwestern Willow Flycatcher Habitat Management Plan* (BLM 1998b). The tract does not have a complete perimeter fence and has had extensive trespass grazing for the past several years. The

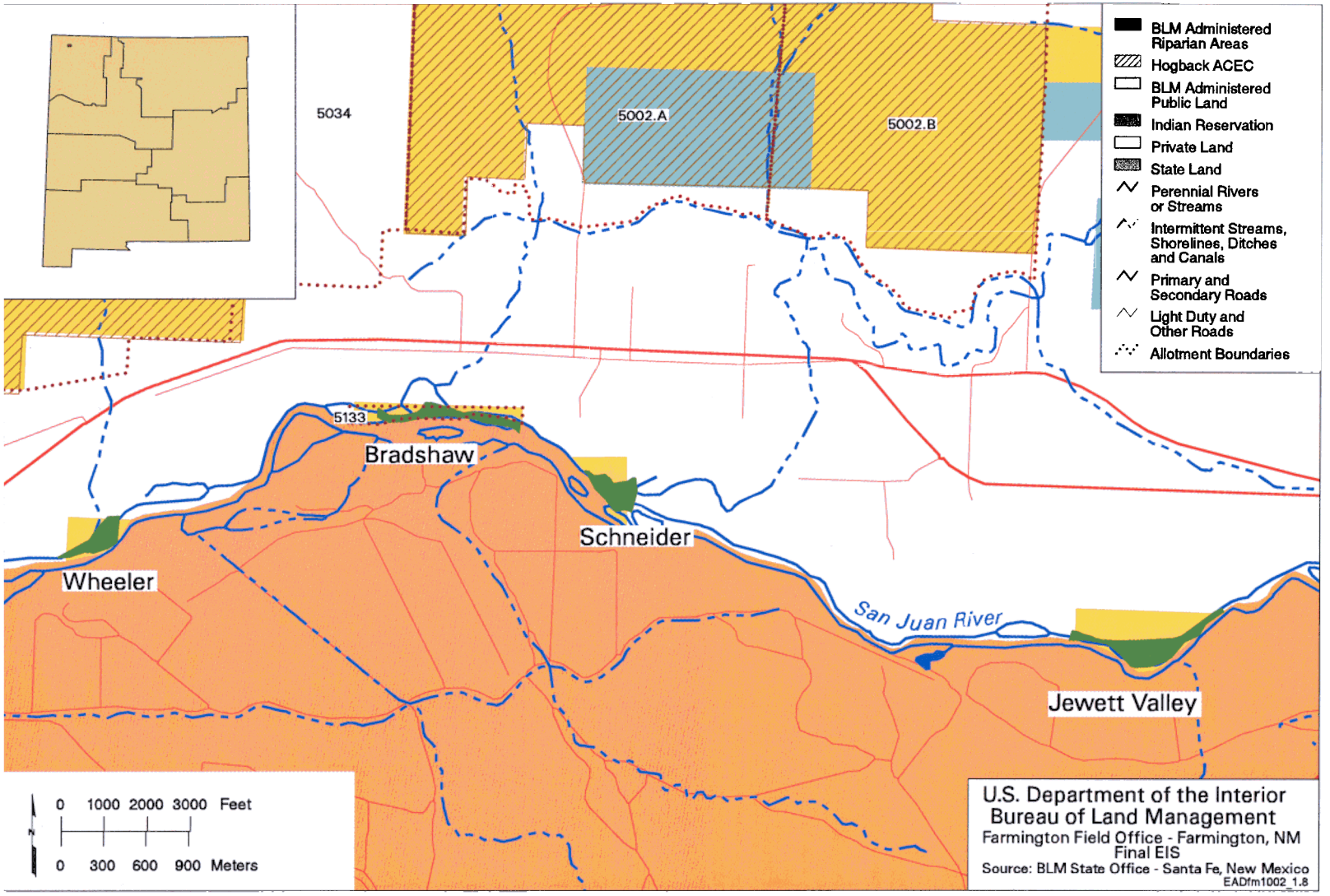


FIGURE 1.8 Bradshaw, Wheeler, Schneider, and Jewett Valley Riparian Areas

trespass cattle have caused extensive damage to the willow stands. Several beaver have been foraging on the tract and have severely damaged the willows. In places with the highest willow potential, the beavers have cut the mature trees and then the trespass cattle have eaten the new willow shoots.

As of July 1998 (BLM 1998c), the Bradshaw tract had a rating of PFC with no apparent trends or other factors that might contribute to unacceptable conditions outside the control of the BLM.

1.2.1.8 Bull Calf Tract

The Bull Calf Tract (Figure 1.9) is a 40-acre parcel of land that has about 0.2 mile of San Juan River frontage and about 0.15 mile of secondary river frontage. Riparian habitat occupies about 0.35 acre in this tract. An island formed by a second channel contains about 20 acres of open cottonwood woodland with an understory of rabbitbrush, sagebrush, and grasses. The cottonwoods in the woodland area are mature trees with heights of between 30 and 45 feet. The canopy cover provided by the cottonwoods is about 25 to 40%. Some scattered Russian olive trees grow throughout the area. The secondary channel is south of the main channel and has a limited flow, but retains surface water throughout the year. A band of riparian vegetation grows along both sides of the channel. The band is about 30 to 45 feet wide and contains Russian olive trees, saltcedar, reed canary grass, willows, and rushes. Trees are about 6 to 9 feet tall within the first 15 feet from the bank. Beyond 15 feet, the vegetation is dominated by young Russian olive trees, with some saltcedar and willows. The Russian olive trees grow to heights of about 12 to 18 feet. The willows that grow in the Russian olive stands are about 9 to 12 feet tall. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

North of the main channel of the river, 3 acres of land has been fenced and trespassed by a private landowner. The landowner has cleared the parcel and is using it for pasture. The remainder of the tract has not been affected by trespass cattle or recreation. No grazing is authorized on the tract. The tract is being adversely affected by flow regulations in the San Juan River. As of July 1998 (BLM 1998c), the tract had been rated FAR with an upward trend.

1.2.1.9 Desert Hills Tract

The Desert Hills Tract (Figure 1.9) consists of 200 acres of land. The tract has about 5 acres of riparian vegetation concentrated along 0.38 mile of San Juan River frontage. The northwestern quarter of Section 35 contains most of the riparian habitat, where the main channel of the river has braided into three small channels. An island formed by the channels contains a dense Russian olive woodland. These trees are about 12 to 18 feet tall. Some open areas on the island are dominated by grasses, including rabbitfoot grass, brome, sedge, and herbaceous species, including cocklebur, aster, and other composites growing to 7 feet tall. The island is bounded on the north by a small channel that has moderately slow flowing water. Some willows grow along this channel; however, they are only 3 to 6 feet tall.

A marsh covers about 10 acres north of the island. This marsh supports dense growths of sedges and rushes. A small area of cattails is located in the middle of the marsh. The edge of the marsh supports scattered Russian olive and cottonwoods that do not provide a complete canopy cover. A small stream runs through the eastern portion of the tract. This stream follows

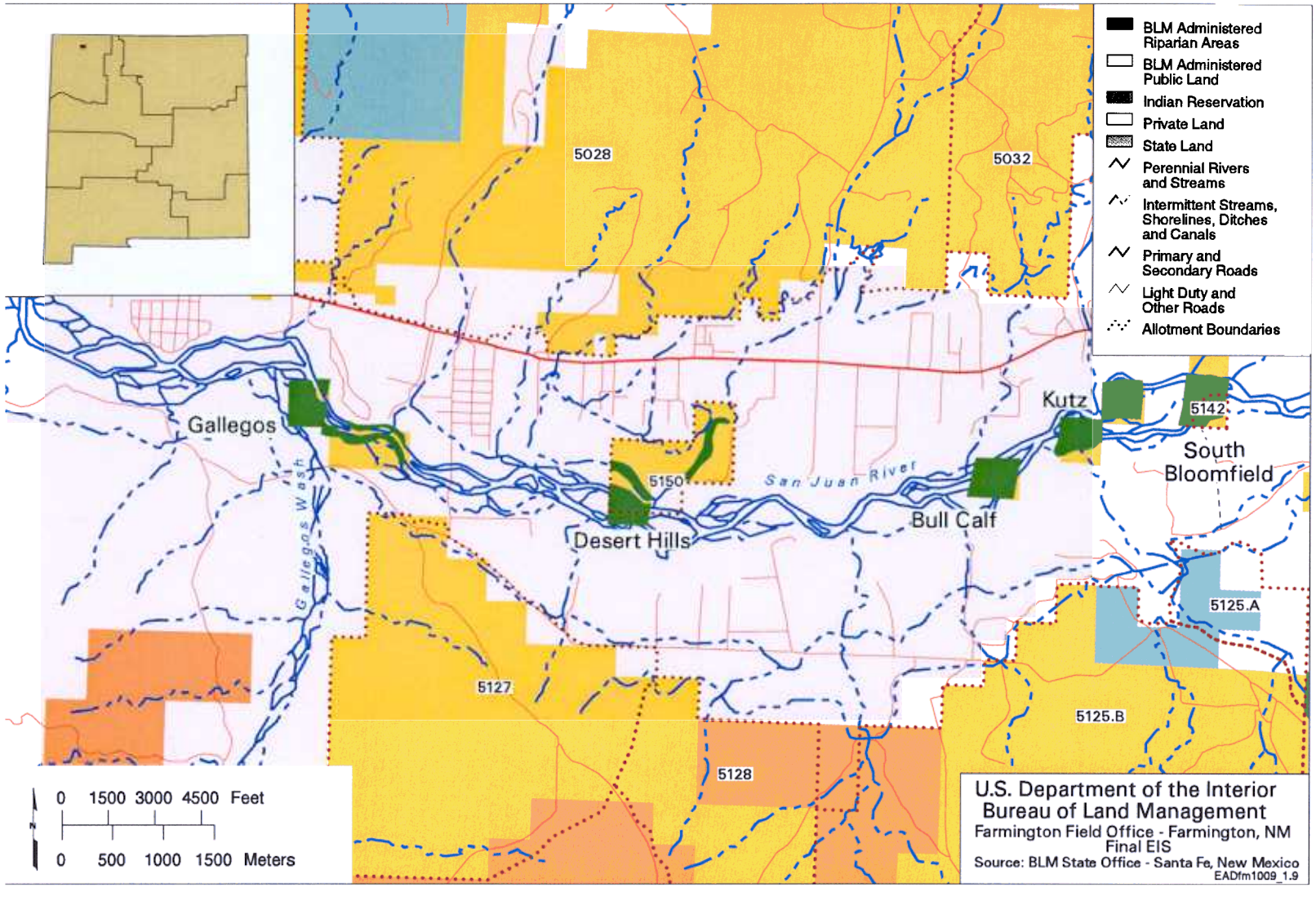


FIGURE 1.9 Bull Calf, Gallegos, Desert Hills, Kutz, and South Bloomfield Riparian Areas

a narrow drainage and exits BLM-administered land and flows onto private property about 0.12 mile from the river.

A 30- to 60-foot wide band of saltcedar and Russian olive trees grows along the drainage. The trees are 12 to 24 feet tall. Outside of this band of trees, upland grasses with some sagebrush and rabbitbrush extend up the sides of the drainage.

The Desert Hills Tract is wholly included in Allotment No. 05150, which authorizes 42 cattle AUMs from May 1 until October 31. All riparian areas along the San Juan River are fenced and excluded from grazing. The Farmington Field Office is evaluating the need to change the authorization to dormant season grazing in accordance with the *Southwestern Willow Flycatcher Habitat Management Plan* (BLM 1998b). The permittee on this tract has always worked cooperatively with the BLM, and the riparian habitat on the tract is in very good condition. The tract also receives some light recreational use by hunters during the fall and winter. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998a).

As of July 1998 (BLM 1998a), the Desert Hills Tract had a PFC rating with no apparent trends.

1.2.1.10 Gallegos Tract

The Gallegos Tract (Figure 1.9) consists of a total of about 120 acres of land with about 0.86 mile of San Juan River frontage. The tract supports about 20 acres of riparian vegetation. Gallegos Wash enters the San Juan River on the southern bank and dissects the tract into two habitat areas: Area 1 and Area 2.

Area 1 is located east of the mouth of Gallegos Wash. This woodland consists of Russian olive trees and saltcedar, with scattered emergent cottonwoods along the southern shoreline of the river. Dense riparian woodland dominated by Russian olive trees and saltcedar occurs in bands 75 feet wide along the southern shore. Farther down the river is a 150-foot wide band of Russian olive and saltcedar growing 3 to 18 feet tall, with an understory of grasses. The tract has numerous scattered cottonwoods that do not provide a continuous overstory. No willows occur in the area.

Area 2 is located west of the mouth of Gallegos Wash. This riparian area consists predominantly of saltcedar, with some cottonwoods and Russian olive trees. Open areas are vegetated with alkali sacaton grass and rubber rabbitbrush. The riparian vegetation of Area 2 is patchy. The largest patches cover about 0.25 acre and support saltcedar and Russian olive trees to heights of 12 to 18 feet. Grassy openings between the patches of saltcedar and Russian olives are dominated by alkali sacaton and rabbitbrush.

Gallegos Wash drains surface water from irrigation activities in the Navajo Indian Irrigation Project. For several years, a constant flow of water has occurred in the wash. The wash is about 225 feet wide, but only a small portion of that is covered in shallow water (less than 1.5 feet deep). Vegetation along the wash is limited to scattered clumps of saltcedar growing in sagebrush and rabbitbrush uplands.

The Gallegos Tract is not a part of a grazing allotment, and there is little evidence of trespass grazing. During waterfowl season, the tract receives some recreational use from hunters. During the remainder of the year, only occasional hikers use the tract. No willows or standing water wetlands occur on the tract, but the saltcedar/Russian olive vegetation could provide some marginal long-term (4 to 10 years) habitat for the southwestern willow flycatcher (BLM 1998b).

The Gallegos Tract was not included in the July 1998 BLM survey (BLM 1998c); however, it was rated as FAR in 1994 (no trend given).

1.2.1.11 Jewett Valley Tract

The Jewett Valley Tract (Figure 1.8) occupies 36 acres, including about 5 acres of riparian habitat along 0.48 mile of river frontage. The eastern 1 to 1.5 acres of the tract supports a dense growth of Russian olive trees that are about 18 feet tall and provide a canopy cover of about 60 to 80%. The understory is very sparse grass. The remainder of the tract contains some scattered old-growth cottonwoods and stands of saltcedar. Interspersed between the saltcedar are several areas of coarse cobblestone that do not support vegetation. An irrigation canal runs along the base of the sandstone bluff and carries water between the middle of April and the middle of October. Very little vegetation occurs along the canal banks. A few scattered willows grow in the tract.

The Jewett Valley Tract is not allotted, but has been severely affected by grazing of trespass livestock. Two horses were observed on the tract during a staff survey. The trespass livestock have eaten nearly all of the palatable vegetation and have even eaten the bark from some of the trees. Only the eastern 1 to 1.5 acres is marginally potential long-term (4 to 10 years) habitat for the southwestern willow flycatcher (BLM 1998b).

As of July 1998 (BLM 1998c), the Jewett Valley Tract had a PFC rating with no apparent trends.

1.2.1.12 Kutz River Tract

The Kutz River Tract (Figure 1.9) consists of two 40-acre parcels that have adjacent corners. About 5 acres of riparian habitat occurs along 0.86 mile of river frontage on the San Juan River. An additional 11.1 miles of riparian habitat occurs along ephemeral streams in the canyon. The southwestern 40-acre parcel of the tract contains about 35 acres of open cottonwood woodland. These trees are about 30 to 45 feet tall and provide a canopy cover of about 20%. Scattered New Mexico olive and saltcedar grow throughout the tract but do not offer any continuous dense patches of cover. The understory consists of Indian rice-grass and alkali sacaton growing with sagebrush and rabbitbrush. A channel of the river flows through the tract for about 0.25 mile. The southern side of the channel has recently been invaded by Russian olive trees that are already 9 to 12 feet tall. Some very scattered willows grow in this stand of young Russian olive trees. The northern side of the channel has a 6-foot-high cut bank and does not support suitable southwestern willow flycatcher habitat.

The northeastern 40-acre parcel has open cottonwood woodlands. These cottonwoods are about 40 to 60 feet tall and provide a canopy coverage of about 25 to 40%. The understory consists of Indian rice-grass, alkali sacaton, sagebrush, rabbitbrush, and some scattered New Mexico olive. An old channel on the eastern side of the tract is being invaded by saltcedar (about 6 feet tall). The thickest vegetation occurs along a 0.2-mile reach of the main river channel. This vegetation is dominated by Russian olive trees, with some cottonwoods. These Russian olive trees, which grow in a band about 60-feet wide, are about 18 feet tall. Some scattered willows grow along the river bank to a height of about 6 feet. The Kutz River Tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b). The Kutz River Tract is not within a grazing allotment.

As of July 1998 (BLM 1998c), the Kutz River Tract had a FAR rating with a downward trend.

1.2.1.13 La Plata River Tract

The La Plata River Tract (Figure 1.10) occupies 67 acres, including about 5 acres of riparian habitat along 0.38 mile of San Juan River frontage. This tract supports stands of Russian olive and cottonwoods. The Russian olive trees are between 15 and 18 feet tall; the canopy cover is about 70 to 80%. The cottonwood overstory is between 24 and 40 feet high. A dense understory exists throughout the tract. A drainage from the bluffs north of the river has created a narrow, scoured channel. An irrigation canal (Farmers Mutual Ditch) runs through the tract. No willows occur on the tract, and the density of saltcedar is very low. The habitat was rated as having potential for southwestern willow flycatcher migration, but was considered to be marginal for nesting in the long term [4 to 10 years (BLM 1998b)].

No grazing is authorized on the La Plata River Tract, and no sign of trespass grazing was noted during BLM staff inspection of the site. Deer tracks were observed along the side of the channel and along the irrigation ditch. Beaver damage was noted, and several cottonwoods had been felled. The neighboring landowner to the west has bulldozed the Russian olive trees and reduced the cover to scattered cottonwoods and bare soil. There is no fence or any other observable boundary markers on the site.

As of July 1998 (BLM 1998c), the La Plata River Tract had a PFC rating with no apparent trends.

1.2.1.14 La Plata River Tract 1

La Plata River Tract 1 (Figure 1.10) occupies 89 acres. The tract has about 6 acres of riparian habitat and 0.48 mile of La Plata River frontage on both sides of the river. The riparian zone extends from about 45 to 180 feet from the river and consists of willows, saltcedar, Russian olive, and cottonwoods. Along the western bank, most of the willows are less than 9 feet tall and are very patchy. On the eastern bank, there are a few willows that are less than 6 feet tall. Saltcedar grows along both banks in clumps and patches rather than in continuous stands. A few large cottonwoods grow throughout the riparian area, but they do not provide a continuous overstory. The best southwestern willow flycatcher habitat is located on the northwestern corner of the tract in an old water channel. This area is about 90 feet wide and extends for about 450 feet. A good stand of willows is growing in the old channel. These willows are about 12 feet tall. Russian olive trees (about 15 to 18 feet tall) grow along the sides of the willow stand. There is no surface water in the old channel. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 1 is part of Allotment No. 05140, which authorizes 746 AUMs between November 3 and February 28. This allotment is operated on a deferred rotation system, and there is little sign that permitted livestock (i.e., sheep) are damaging the riparian vegetation. There are signs of cattle grazing, but most of the cattle damage is probably produced by trespass cattle coming from the adjacent private land to the west. No boundary fence exists to exclude these cattle. La Plata River Tracts 1 through 8 are all within the Glade Run Trail System Special Management Area. Recreation has, however, had only a small impact on the associated riparian habitat.

La Plata River Tract 1 was not included in the July 1998 survey (BLM 1998c); however, it was rated FAR (no trend indicated) in 1994.

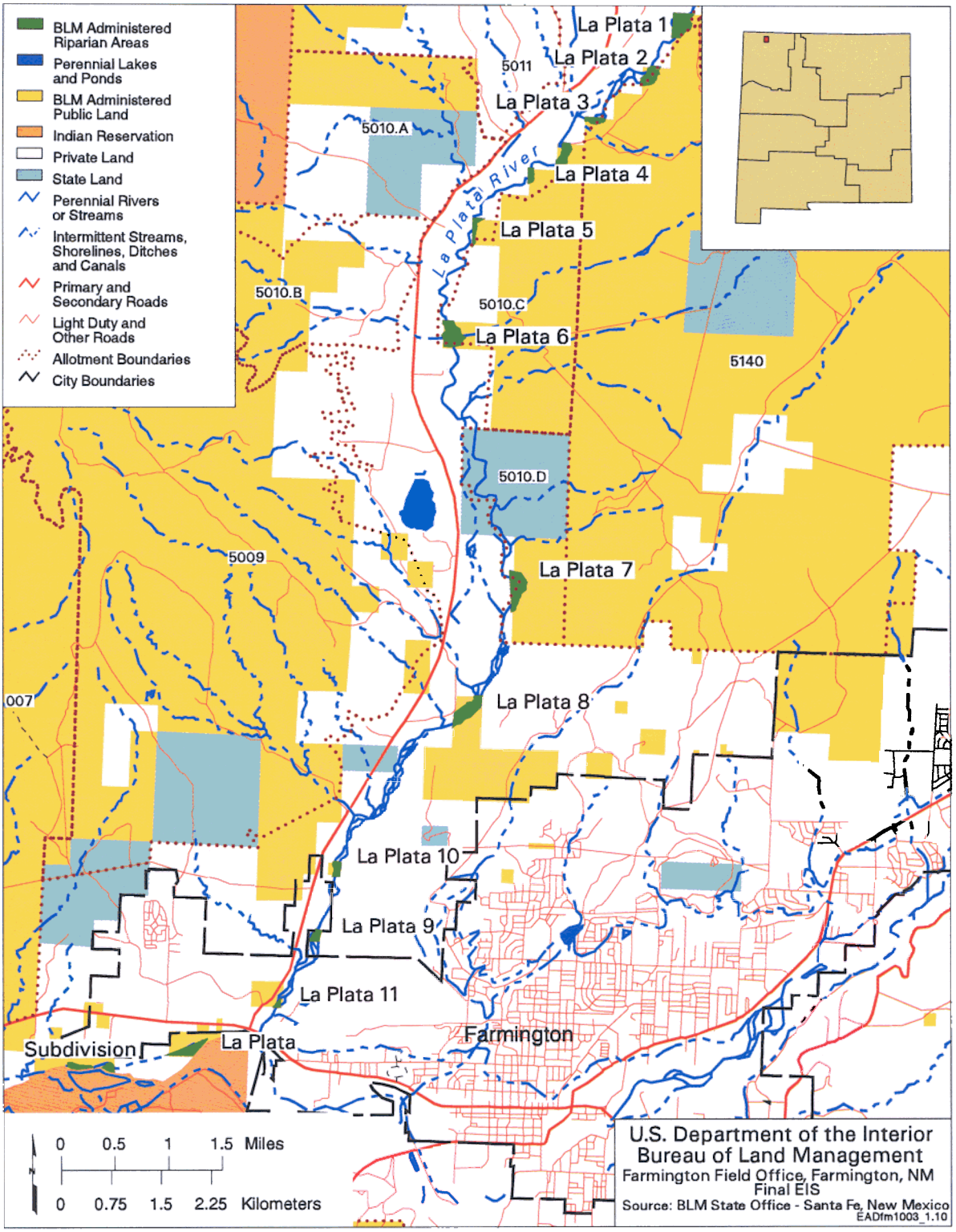


FIGURE 1.10 La Plata River Tracts and Subdivision Tract Riparian Areas

1.2.1.15 La Plata River Tract 2

La Plata River Tract 2 (Figure 1.10) occupies 80 acres, including about 5 acres of riparian vegetation along about 0.2 mile of river frontage on the La Plata River. The vegetation on the eastern bank is dominated by saltcedar growing 6 to 12 feet tall. The saltcedar grows in clumps and patches, not in continuous stands. The saltcedar extends about 60 to 120 feet from the edge of the water. Some short (less than 6-foot-tall) willows grow in a narrow band along the river's edge. About 0.33 acre of cottonwoods growing on the eastern bank provides a canopy coverage of about 60%.

The western bank supports an old cottonwood gallery forest of about 3 acres. These cottonwoods are about 30 to 45 feet tall and provide a canopy cover of about 50 to 60%. Scattered saltcedar grow among the cotton-woods, and some Russian olive trees are invading the area, especially near the bank of the river. The Russian olive trees are about 21 feet tall, but they are scattered. A narrow band of willows grows along the river. The willows are generally less than 6 feet tall and extend less than 15 feet from the edge of the water. A wetland area is located in the extreme northwestern corner of the tract, but only about 0.1 acre of this wetland is on BLM-administered land. The willows in the BLM portion of the wetland are about 9 feet tall. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 2 is part of Allotment No. 05140. Only sheep are permitted on the allotment. No sheep sign was observed on the tract; however, there have been trespass cattle. The trespass cattle probably came from private land to the west, since no fence occurs at the western boundary.

At this time, the tract does not have suitable habitat for southwestern willow flycatcher nesting. The potential for developing nesting habitat is limited because saturated soils only occur within a very narrow band along the edge of the water.

La Plata River Tract 2 was not included in the July 1998 BLM survey (BLM 1998c); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.16 La Plata River Tract 3

La Plata River Tract 3 (Figure 1.10) occupies 40 acres. The tract has about 2 acres of riparian habitat along 0.12 mile of frontage along the La Plata River. The riparian area is located between the river channel and a bluff on the eastern side of the river. The riparian area is a declining cottonwood gallery that now has many dead and down trees. Living cottonwoods in the area are about 30 to 45 feet tall and provide a canopy cover of about 40%. Some cottonwood regeneration is occurring along the bank of the river. Some scattered Russian olive trees grow to heights of about 30 feet, but they do not form continuous stands. Saltcedar grows in patches and clumps throughout the riparian area. The largest patches of saltcedar occupy less than 0.1 acre. One small stand of willows grows along the river bank but covers less than 0.1 acre. This tract does not provide southwestern willow flycatcher habitat. However, this tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 3 is part of Allotment No. 05140. Only sheep are authorized to graze on the tract, but no sheep sign was observed during evaluation inspections. Some cattle sign was observed on the tract from trespass grazing. These cattle are believed to be from private land to the west.

La Plata River Tract 3 was not included in the July 1998 BLM survey (BLM 1998c); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.17 La Plata River Tract 4

La Plata River Tract 4 (Figure 1.10) occupies 120 acres and includes about 5 acres of riparian habitat along about 0.38 mile of river frontage on the La Plata River. The riparian habitat is generally confined to narrow bands that extend an average of less than 60 feet from the river channel. The riparian habitat is dominated by saltcedar that grows in clumps and patches. The saltcedar reaches heights of 6 to 15 feet. Willows grow in a very narrow band extending less than 30 feet from the edge of the water. These willows (which are 6 to 9 feet tall) are patchy and do not form a continuous band along the entire river frontage. The entire tract was heavily affected by a wildfire in 1996. Most of the saltcedar trees on the tract were burned. Resprouts are now about 6 feet tall. Some dryer uplands outside of the riparian bands support some scattered cottonwood and New Mexico olive trees. The understory in these uplands is dominated by sagebrush and rabbitbrush. There are no marshes or wetlands outside of the river channel.

La Plata River Tract 4 is part of Allotment No. 05010; however, the riparian portion of the tract is fenced out by a barbed wire fence that is in poor condition. Trespass grazing by cattle from a private landowner to the west of the tract has severely affected the vegetation. A fence along the western side of the river channel does not appear to be on the BLM- administered property line.

Because of the 1996 wildfire and trespass grazing, the tract does not provide southwestern willow flycatcher habitat. Even with encouraged vegetation recovery, the tract will only support very marginal long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b) because of the narrowness of the willow stands. The tract was not part of the July 1998 BLM survey (BLM 1998c); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.18 La Plata River Tract 5

La Plata River Tract 5 (Figure 1.10) is a 40-acre parcel containing 3 acres of riparian habitat along about 0.08 mile of river frontage. A narrow, 30- to 35-foot-wide band of willows and saltcedar grows along the river channel. This band of vegetation has a canopy cover of about 60%. The willows are about 6 to 9 feet tall, and the saltcedar grow to a height of 12 to 15 feet. Some Russian olive trees also grow in this band. In places, the Russian olive trees have a canopy cover of about 30% and are about 18 to 24 feet tall. Outside of the band of willows and saltcedar, scattered mature cottonwoods growing to heights of 36 to 50 feet provide a canopy cover of up to 20%. There is little evidence of cottonwood regeneration on the tract. The ground cover consists of a mixture of sagebrush, greasewood, four-wing saltbrush, and some galleta grass. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b). However, the potential to develop good southwestern willow flycatcher habitat is limited because of the narrowness of the strip of willows and saltcedar and the lack of any other wetland areas on the tract.

No grazing is authorized on the riparian portion of the tract. Allotment No. 05010 includes the uplands to the east of the river channel but not the riparian area. A fence separates the riparian area from the uplands, but the fence is in poor repair. Evidence of recent light cattle grazing and historic moderate to heavy grazing in the riparian area was observed;

however, it is not known if this grazing was from cattle crossing the fence from Allotment No. 05010 or from trespass cattle coming from private land on the western side of the river.

La Plata River Tract 6 was not part of the July 1998 BLM survey (BLM 1998c); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.19 La Plata River Tract 6

La Plata River Tract 6 (Figure 1.10) is a 40-acre parcel of land with the La Plata River running through its center. The tract supports approximately 12 acres of riparian vegetation in a narrow band along 0.33 mile of the banks of the river channel. Saltcedar dominates the vegetation, with some willows near the edge of the water. Most of the saltcedar are mature and grow to heights of 12 to 18 feet in patchy clumps in a very narrow band along the river. Most of the willows also grow in a very narrow band along the river and reach heights of 3 to 8 feet. The band of saltcedar/willow extends about 15 to 75 feet from the channel, with an average width of 24 to 30 feet. Some Russian olive and cottonwoods also grow within this band. The canopy density can reach 30 to 40% along the outer edge of the band.

A band of saltcedar/willows and Russian olive trees also occurs in the middle of the tract on the eastern side of the river. This band is about 100 feet long and 30 feet wide. It has a canopy coverage of about 80 to 90% and a height of about 9 to 18 feet. Mature cottonwoods are scattered throughout the tract, but they do not provide a continuous canopy cover. Some cottonwood regeneration is occurring on exposed sandbars and on open sandy areas. No sources of water or wetlands occur on the tract other than the river channel. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 6 is part of Allotment No. 05010 (Table 1.1). This allotment is authorized between 109 and 142 AUMs, depending on the season. However, the tract has not received grazing pressure in recent years because the boundary fences are in disrepair, and livestock could roam into areas of private residences just west of the tract. The tract is subject to some recreational use impacts from all-terrain vehicles and horseback riders.

La Plata River Tract 6 was not part of the July 1998 BLM survey (BLM 1998c); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.20 La Plata River Tract 7

La Plata River Tract 7 (Figure 1.10) occupies 80 acres, including about 20 acres of riparian vegetation along about 0.43 mile of frontage on the La Plata River. The riparian vegetation grows in a narrow band (about 30 to 45 feet wide) along the river channel. This band of vegetation contains mostly saltcedar and Russian olive trees. The Russian olive trees are 15 to 21 feet tall. The saltcedar grows to heights of 12 feet but does not form continuous stands. Some small patches of mixed saltcedar and Russian olive trees attain canopy covers of up to 70%. Some scattered willows occur along the channel banks. These willows are less than 7 feet tall and produce a canopy cover of less than about 20%. Some scattered mature cottonwoods grow throughout the tract, but no cottonwood regeneration was observed. No wetlands or saturated soils other than the active river channel occur on the tract.

La Plata River Tract 7 is adjacent to Allotment No. 05010. This tract was once part of an allotment, but it no longer is. The tract is separated from Allotment No. 05010 by natural land barriers such as cliffs and bluffs. The tract received very light grazing use during the spring of 1997. It is not known if this use was from

permitted cattle on Allotment No. 05010 or trespass cattle. A good fence is not present on the tract. The southwestern willow flycatcher habitat on this tract is very marginal because of the narrowness of the riparian band and the patchy characteristics of the saltcedar and Russian olive trees. This tract is expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 7 was not part of the July 1998 BLM survey (BLM 1998a); however, it was rated FAR in 1994 (no trend indicated).

1.2.1.21 La Plata River Tract 8

La Plata River Tract 8 (Figure 1.10) occupies 80 acres, including about 8 acres of riparian vegetation along about 0.48 mile of frontage on the La Plata River. Riparian vegetation grows in a very narrow band (9 to 15 feet wide) along the banks of the active river channel. This band of vegetation supports only scattered populations of Russian olive trees and saltcedar, with a few scattered short willows. Vegetation density does not exceed 50% anywhere in this band. Most of the vegetation of the tract is upland vegetation such as greasewood, rabbitbrush, and sagebrush. Some cottonwoods and New Mexico olive trees are scattered around the tract. Some evidence of cottonwood regeneration has been observed in some of the many patches of bare ground. No wetlands or areas of saturated soils occur outside the active channel of the river.

La Plata River Tract 8 is not within a grazing allotment, and there is no evidence of cattle grazing on the tract. A small amount of recreational horseback riding has occurred there, however. Grazing impacts by the horses have been very light. It is doubtful if the vegetation on this tract will develop into potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

La Plata River Tract 8 was rated as PFC in 1998 (BLM 1998c).

1.2.1.22 La Plata River Tract 9

La Plata River Tract 9 (Figure 1.10) occupies 65 acres. About 6 acres of riparian vegetation occurs along about 0.25 mile of frontage on the La Plata River. Riparian vegetation grows along both banks of the river and consists mainly of saltcedar, with some scattered Russian olive trees. The saltcedar grows to heights of about 9 to 18 feet and in some small patches reaches densities of 60 to 80%. However, the dense saltcedar patches do not form continuous stands.

No grazing is authorized within La Plata River Tract 9, and there is no evidence of trespass grazing. Private residences occupy the land west of the tract, and some residential trespass may occur. The Farmington City Parks Department has applied to the BLM for a long-term Recreation and Public Purpose lease to develop a city park in and above the riparian areas of the tract. The preliminary plan calls for a nature trail through the riparian area. This trail would exclude all motor vehicle traffic and would be laid out and built in coordination with the BLM and threatened and endangered species specialists. The BLM would retain jurisdiction of the tract and review any development plans before they were implemented.

La Plata River Tract 9 was surveyed in 1997 for the southwestern willow flycatcher; no breeding southwestern willow flycatcher were observed, but the tract has long-term potential [4 to 10 years (BLM 1998b)]. The tract was not part of the July 1998 BLM survey (BLM 1998c); however, it was rated as FAR in 1994 (no trend indicated).

1.2.1.23 La Plata River Tract 10

La Plata River Tract 10 (Figure 1.10) is a 10-acre parcel just inside the city limits of Farmington, New Mexico. The tract has about 0.5 acre of riparian habitat along about 0.15 mile of frontage on the La Plata River. Two small point bars along the channel support about 1 acre of riparian vegetation consisting of a mixed community of saltcedar, Russian olive trees, cottonwoods, and willows. The vegetation is dominated by saltcedar, which is about 12 to 18 feet tall and reaches densities of about 60 to 70%. Some shorter willows grow along the active river channel, but they do not contribute significantly to the overall density of vegetation. Scattered Russian olive and cottonwoods grow on the tract. Some cottonwood regeneration is occurring.

No grazing is authorized on the La Plata River Tract 10, and no evidence of trespass grazing was found. The Farmington City Parks Department has applied to the BLM for a long-term Recreation and Public Purpose lease to develop a city park in the riparian areas of the tract. The preliminary plan calls for a nature trail through the riparian area. This trail would exclude motorized vehicles and would be laid out and built in coordination with the BLM and threatened and endangered specialists. The BLM would retain ownership of the tract and review any development plans before they were implemented.

La Plata River Tract 10 was surveyed in 1997, and no breeding southwestern willow flycatcher were observed. This tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b). As of July 1998 (BLM 1998c), the tract had a PFC rating.

1.2.1.24 Pump Canyon

The Pump Canyon riparian area consists of four lower reaches of the Pump Canyon drainage (Figure 1.6). All four reaches were fenced in the fall of 1998 to accommodate a change to dormant season grazing in the riparian zones in accordance with the *Southwestern Willow Flycatcher Habitat Management Plan* (BLM 1998b).

Descriptions of the four reaches within Pump Canyon are provided below.

Reach 1: Reach 1 is the lowest reach and contains about 18 acres of riparian vegetation located along 1.57 miles of river frontage. The dominant vegetation is saltcedar that reaches heights of about 6 to 15 feet. The stands of saltcedar are patchy, however, and do not provide continuous cover. A few willows grow along a wash, but they are only about 6 feet tall and sparse. This reach is grazed under a deferred rotation system in Allotment No. 05041. Evidence of cattle grazing is apparent. The potential southwestern willow flycatcher habitat is limited to the two point bars; however, this habitat is, at best, marginal.

Reach 2: Reach 2 has about 20 acres of riparian habitat along 1.24 miles of frontage. Cattle have been excluded from this reach since 1992, except for dormant-season use in 1995 (Allotment No. 05041). Willows about 6 to 9 feet tall grow along the fence between Reach 1 and Reach 2. The willows generally grow in a band along the active river channel; however, in places, young willow extend 150 to 225 feet from the edge of the water. There is some evidence of cattle grazing, but utilization has been very light. The potential southwestern willow flycatcher habitat is marginal, but improving.

Reach 3: Most of the riparian areas along Reach 3 (15 acres along 1.04 miles of river frontage) are dominated by saltcedar and willow. Most of these trees are short and reach to only 6 to 8 feet. Mature cottonwoods are widely scattered and do not form a consistent overstory. As with Reach 1, Reach 3 is grazed under a deferred rotation system in Allotment No. 05041. Cattle were grazing in the riparian area during the spring of 1997. This reach does not provide suitable nesting habitat for the southwestern willow flycatcher.

Reach 4: Reach 4 contains about 10 acres of riparian vegetation along 1.2 miles of river frontage. This reach is part of Allotment No. 05048. It is separated from Reach 3 by a fence. On Reach 4, the willows virtually disappear, and the riparian vegetation is dominated by saltcedar trees reaching about 12 to 18 feet tall. Two areas of about 3 acres each have dense stands of saltcedar that are about 9 to 18 feet tall. Reach 4 is impacted by cattle grazing and does not contain suitable southwestern willow flycatcher nesting habitat.

The BLM has initiated a number of improvements in Pump Canyon, a majority of them under the *Pump Canyon Riparian Activity Plan* (BLM 1993d). Specific improvements include the controlled burning of 10 acres of saltcedar in 1992, construction of 1 mile of riparian fence in 1992, spraying 5 acres of saltcedar in 1993, blasting 1 pothole in 1993, digging 1 pothole in 1998, and construction of 2.25 miles of riparian fence in 1998.

Except for Reach 2, which has a rating of PFC, all reaches of Pump Canyon have been rated FAR, with no trend noted. All four reaches of this tract are expected to provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

1.2.1.25 Santa Rosa Tract

The Santa Rosa Tract (Figure 1.7) is a 40-acre parcel. The San Juan River runs along the southern boundary of the tract for about 0.24 mile. The tract contains about 4 acres of riparian habitat. The southern bank of the river supports some riparian habitat, which consists of saltcedar, Russian olive, cottonwoods, and some willows. This vegetation is dominated by saltcedar, which reaches a height of about 9 to 15 feet. A few willows also grow with the saltcedar. Russian olive trees are scattered along the southern bank but do not provide a continuous canopy cover. The southern bank provides some potential marginal southwestern willow flycatcher habitat.

The northern bank rises quickly into uplands dominated by greasewood, cheat grass, and some sagebrush. A very narrow band of Russian olive trees grows along the river bank, but the band rarely exceeds a width of 30 feet. Three short, unnamed drainages cut through the uplands and empty into the river. These drainages do not have permanent water, but they do support a narrow band of Russian olive trees. This tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

No grazing is authorized on the Santa Rosa Tract. Although some evidence exists of trespass cattle grazing, the impacts are very light. Two fences have been installed near the eastern boundary of the tract, but there is no fence on the southern boundary. The tract receives very light recreational use from hunters.

As of July 1998 (BLM 1998c), the Santa Rosa Tract had a FAR rating with a static trend. Flow regulations in the San Juan River are contributing to unacceptable conditions on the

tract. These flow regulations promote sediment deposition from upstream Largo Canyon and bank cutting during high flows.

1.2.1.26 Schneider Tract

The Schneider Tract (Figure 1.8) occupies 8 acres, including about 3 acres of riparian habitat along about 0.24 mile of San Juan River frontage. There is a small side channel about 300 feet long that contains shallow water. The vegetation on the tract consists of scattered saltcedar about 6 to 9 feet tall and some scattered mature cottonwoods that begin about 300 feet from the edge of the water.

The Schneider Tract is not within a grazing allotment; however, the habitat has been severely affected by trespass cattle. Cattle trails and cattle sign were observed throughout the tract. The fence on the northern boundary was in a dilapidated condition and only extended about half-way along the boundary. No fence was observed along the eastern boundary. Because of the condition of the habitat, it was determined that this tract does not support southwestern willow flycatcher habitat at the present time. However, the tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

As of July 1998 (BLM 1998c), the Schneider Tract had a PFC rating with no apparent trends.

1.2.1.27 Simon Canyon Tract

The Simon Canyon River Tract (Figure 1.6) is situated entirely within the Simon Canyon Recreation Area of Critical environmental Concern (ACEC). The tract is heavily used by sport fishermen, and the river itself has been channelized. The vegetation consists mostly of sagebrush and rabbitbrush, with an overstory of old cottonwoods. There is very little willow, saltcedar, or other growth that would provide habitat for birds, such as the southwestern willow flycatcher.

The tract consists of two riparian areas that have a combined size of approximately 25 acres. The first riparian area has 1 mile of river frontage on the San Juan River. The second riparian area consists of the lower 0.86 mile of Simon Canyon, which has a total length of 4 miles. This portion of the canyon supports a small flow of water during the spring and early summer. The riparian area along the canyon bottom is very narrow (about 30 to 75 feet). Outside of the riparian zone, a narrow band of upland vegetation gives way to steep rock canyon walls. As a result of management activities, willows are becoming established in the canyon. Most of the willows are 6 feet tall, but some stands reach 9 to 12 feet. Some saltcedar also grows in the canyon; however, it is not tall or dense. Cottonwoods grow along the riparian area and provide a canopy cover of about 20%.

No grazing is authorized on the tract. The main activity in the canyon is recreational hiking. Most of the hikers walk up the active channel and do not affect the vegetation. There is no sign of livestock grazing in the canyon. The riparian habitat is improving and now supports marginal southwestern willow flycatcher habitat, although the narrowness of the habitat limits its potential. This tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b).

As of July 1998 (BLM 1998c), the Simon Canyon River Tract had a PFC rating with no apparent trends.

1.2.1.28 South Bloomfield Tract

The South Bloomfield Tract (Figure 1.9) covers about 80 acres, which includes about 50 acres of riparian habitat present along about 0.62 mile of river frontage. The tract is split into three parts: the southern bank of the San Juan River, an island, and the northern bank of the river. The southern bank covers an area of about 11 acres dominated by Russian olive trees, with some scattered patches of saltcedar and cottonwoods. These Russian olive trees vary in height but can grow up to 30 feet tall. Their density is not sufficient to provide good southwestern willow flycatcher nesting habitat. There is no evidence of livestock grazing on this portion of the tract.

The island portion of the tract is formed by a split in the main channel of the river. This portion of the tract occupies about 10 acres of riparian vegetation dominated by Russian olive trees. Some large cottonwoods provide a canopy cover of about 20 to 30%. Clumps of saltcedar grow throughout the area but are concentrated near the river channel. There is no evidence of livestock grazing.

The northern bank of the South Bloomfield Tract has about 30 acres of riparian habitat and about 10 acres of open grassland. The riparian portion of the tract includes a wetland area that covers about 5 acres. There is little open water, but the saturated soils support dense stands of sedges and rushes. A small open-water marsh on the northern boundary of the tract supports about 2 acres of cattails. A wall of Russian olive trees grows along the outside of the sedge and rush wetlands. The stands of Russian olive trees can reach heights of 30 feet. A dredged ditch drains water from the north to the river. Very dense stands of Russian olive trees grow in a band about 75 feet wide along the drainage ditch.

The tract is allotted for grazing under Allotment No. 05142.

This tract could provide potential long-term (4 to 10 years) southwestern willow flycatcher habitat (BLM 1998b). The tract does not receive any significant recreational impacts. As of July 1998 (BLM 1994a), the tract had a PFC rating with no apparent trends.

1.2.1.29 Subdivision Tract

The Subdivision Tract (Figure 1.10) occupies about 67 acres on the San Juan River. The two riparian areas on the tract support about 4 acres of riparian habitat along about 0.76 mile of river frontage. One area occupies about 2 acres on the extreme eastern edge of the tract. Willows grow from the edge of the river into a stand of Russian olive trees. These willows are not dense and only reach a height of about 6 feet. A dense understory of grass grows throughout this 2 acres. A dead-end side channel extends from the river into this habitat for about 200 feet. This channel has permanent water. Adjacent vegetation includes a stand of young Russian olive trees (18 feet tall) with a 50 to 70% canopy cover. There are no willows along this channel.

The second, 2-acre riparian habitat is located near the middle of the tract and includes some old-growth cottonwood galleries at the base of the sandstone bluff. These cottonwoods are 30 to 50 feet tall and have a canopy cover of about 30 to 40%. Russian olive trees extend from the base of the sandstone bluff to the river. These trees are about 18 feet tall. Within this stand of Russian olives, saltcedar and willows grow to heights of 6 to 12 feet.

The Farmers Mutual Ditch runs through the tract along the sandstone bluff and above the

two riparian areas. Both sides of the ditch support willows. These willows are about 3 to 9 feet tall and grow in a narrow strip about 3 to 9 feet wide. Water flows through the ditch from the middle of April through the middle of October.

The Subdivision Tract is not part of a grazing allotment. The nearest allotment is No. 05007, which is located about 0.38 mile from the tract. There is no sign of livestock grazing on the tract, and there is no fence or obvious boundary markers on the tract. Beavers have created some slight damage in the area.

The riparian habitat on the Subdivision Tract has been rated as potential southwestern flycatcher migratory habitat and as marginal short-term (1 to 3 years) nesting habitat for this species (BLM 1998b). As of July 1998 (BLM 1998c), the tract had a PFC rating with no apparent trend.

1.2.1.30 Valdez Tract

The Valdez Tract (Figure 1.7) consists of a string of three 40-acre parcels that have a combined San Juan River frontage of about 0.76 mile. About 60 acres of the tract supports riparian vegetation. The Veterans of Foreign Wars (VFW) have obtained a Memorandum of Understanding (MOU) with the BLM to use 4 acres of uplands for a picnic and camping area. The land affected by VFW improvements are uplands that have no riparian vegetation. The riparian area can be described by smaller units: side channel wetlands, sedge and cattail marsh, and northern and southern river banks.

A small channel north of the main river channel flows through the tract from east to west for a distance of about 0.6 mile. This side channel creates wetlands that support cattails, bulrushes, and a few small and scattered stands of willows. At its widest point, the wetland extends about 60 feet. Two stands of willows are notable along the length of the channel. One stand supports 6-foot-tall willows over an area of about 75 square feet. The other stand, located about 0.25 mile west of the first stand, supports 9-foot-tall willows. The western 0.3 mile of the side channel is dominated by Russian olive thickets. These trees have a height of about 18 feet.

The northwestern corner of the tract is an open sedge and cattail marsh that is flooded by very shallow water. No trees or willows grow in this area. The wetland covers about 4 acres.

The northern bank of the river is dominated by Russian olive trees that grow to heights of 15 to 24 feet. The understory of this area is sparse, and the overstory is not continuous. A few willows scattered along the northern bank grow to about 6 feet.

The southern bank of the San Juan River does not support riparian vegetation because of a high cut bank that extends nearly the entire length of the frontage. Upland vegetation such as rabbitbrush, sagebrush, and grasses dominate the top of the cut bank. In addition, some old, scattered cottonwoods extend out from the bank about 300 feet.

The Valdez Tract is not allotted but has been heavily affected by trespass grazing. Most of the cottonwood regeneration and willows have received heavy grazing pressure. A fence that passes through the cattail marsh is down because of post failure. The uplands in the northeastern part of the tract are heavily affected by recreation use associated with the VFW picnic area. This tract is expected to provide potential short-term (1 to 3 years) southwestern willow flycatcher habitat (BLM 1998b).

As of July 1998 (BLM 1998c), the Valdez Tract had a rating of FAR with no apparent trend. Flow regulations in the San Juan River

that are outside of the control of the BLM may be contributing to unacceptable conditions (e.g., erosion and sedimentation) in the tract.

1.2.1.31 Wheeler Tract

The Wheeler Tract (Figure 1.8) occupies 17 acres, including 2 acres of riparian habitat along 0.28 mile of San Juan River Frontage. The riparian habitat extends in a narrow strip along the river's edge and consists of saltcedar and Russian olive trees. The saltcedar trees are 3 to 9 feet tall. Some Russian olive trees grow within the stand of saltcedar and are less than 18 feet tall. This tract is not allotted but has been impacted by trespass grazing because the tract is not fenced. Flow regulations in the San Juan River have also contributed to unacceptable conditions.

At the present time, the Wheeler Tract does not support southwestern willow flycatcher nesting habitat, although it could provide such habitat in the long term [4 to 10 years (BLM 1998b)]. As of July 1998 (BLM 1998c), the tract had a PFC rating with a downward trend.

1.2.2 Ephemeral Streams

Nine locations in the Farmington Field Office area have ephemeral streams with riparian vegetation. These locations include Blanco Reach, Carrizo Canyon, Ditch Canyon, Gobernador Canyon, Kutz Canyon, La Jara Canyon, Largo Canyon, Palluche Canyon, and Simon Canyon. A brief description of the ephemeral stream riparian habitats is provided below. (Note that for the ephemeral riparian habitats only stream lengths are provided; areas for the riparian habitats are not available.)

1.2.2.1 Blanco Reach

Blanco Reach contains about 0.75 mile of riparian habitat along one reach of an ephemeral stream bed (Figure 1.11). The area is surrounded by land owned by the Bureau of Indian Affairs. It is not within an allotment. The riparian habitat is characterized by mostly saltcedar, with a few cottonwoods and willows. High cut banks are present, and the drainage is very wide. A large sediment load is being carried downstream from lateral bank cutting. This reach was rated as FAR with a static trend.

1.2.2.2 Carrizo Canyon

Carrizo Canyon has been divided into eight reaches (Figure 1.12). Four grazing allotments coincide with these reaches: Nos. 05106, 05108, 05109, and 05093.

The BLM has initiated some improvements in Carrizo Canyon. These improvements include constructing three small exclosures in 1992 and planting two acres with cottonwood poles in 1996.

Descriptions of the eight reaches within Carrizo Canyon are provided below.

Reach 1: Reach 1 has a length of about 10.8 miles and is located in Allotment No. 05106. The dominant riparian vegetation is saltcedar, which makes up about 90% of the vegetation biomass. Good stands of cottonwoods are present, with excellent regeneration. Willows are almost nonexistent. Some high cut banks are present and lateral erosion is evident. This reach has been rated as FAR with an upward trend.

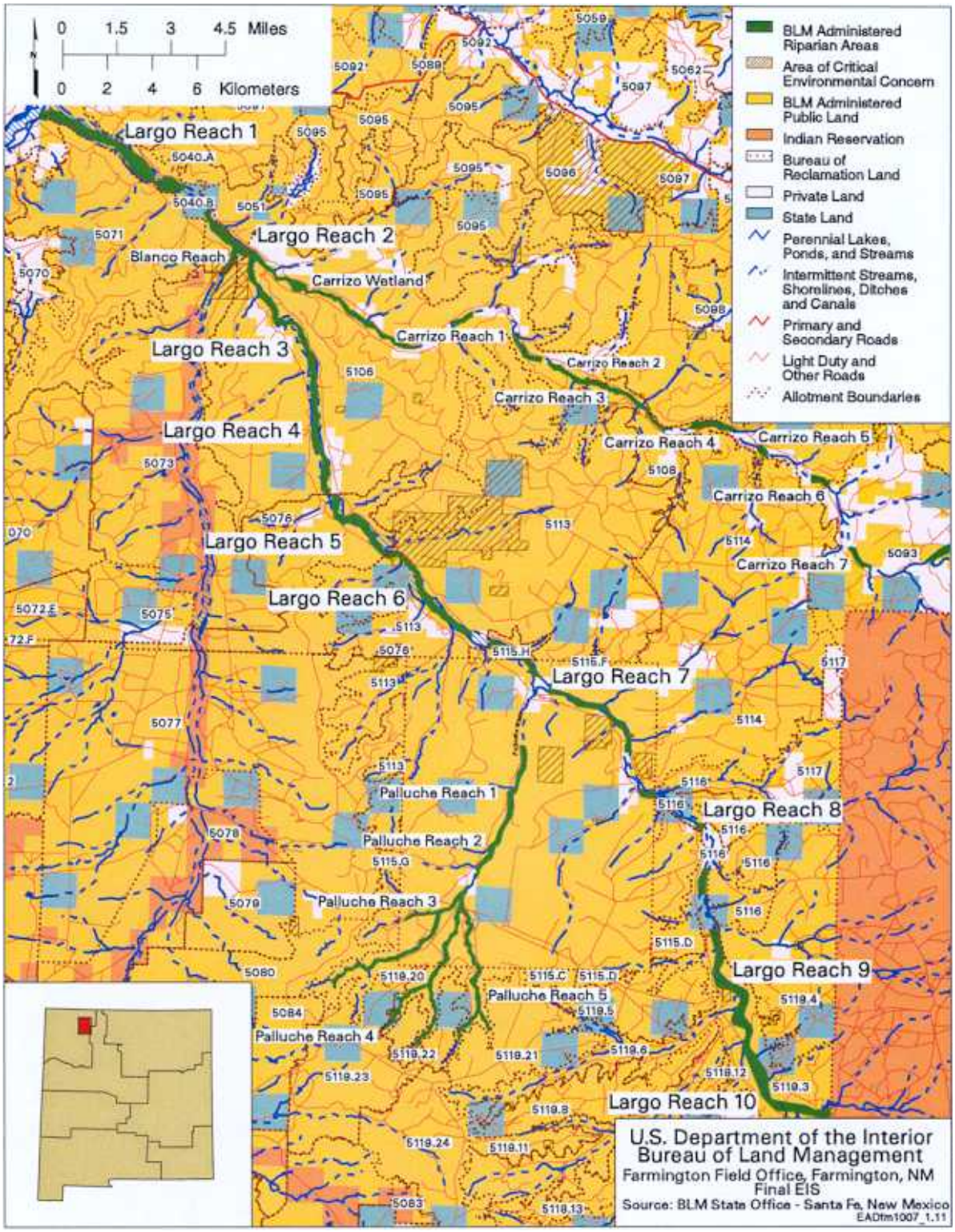


FIGURE 1.11 Largo Canyon Riparian Areas

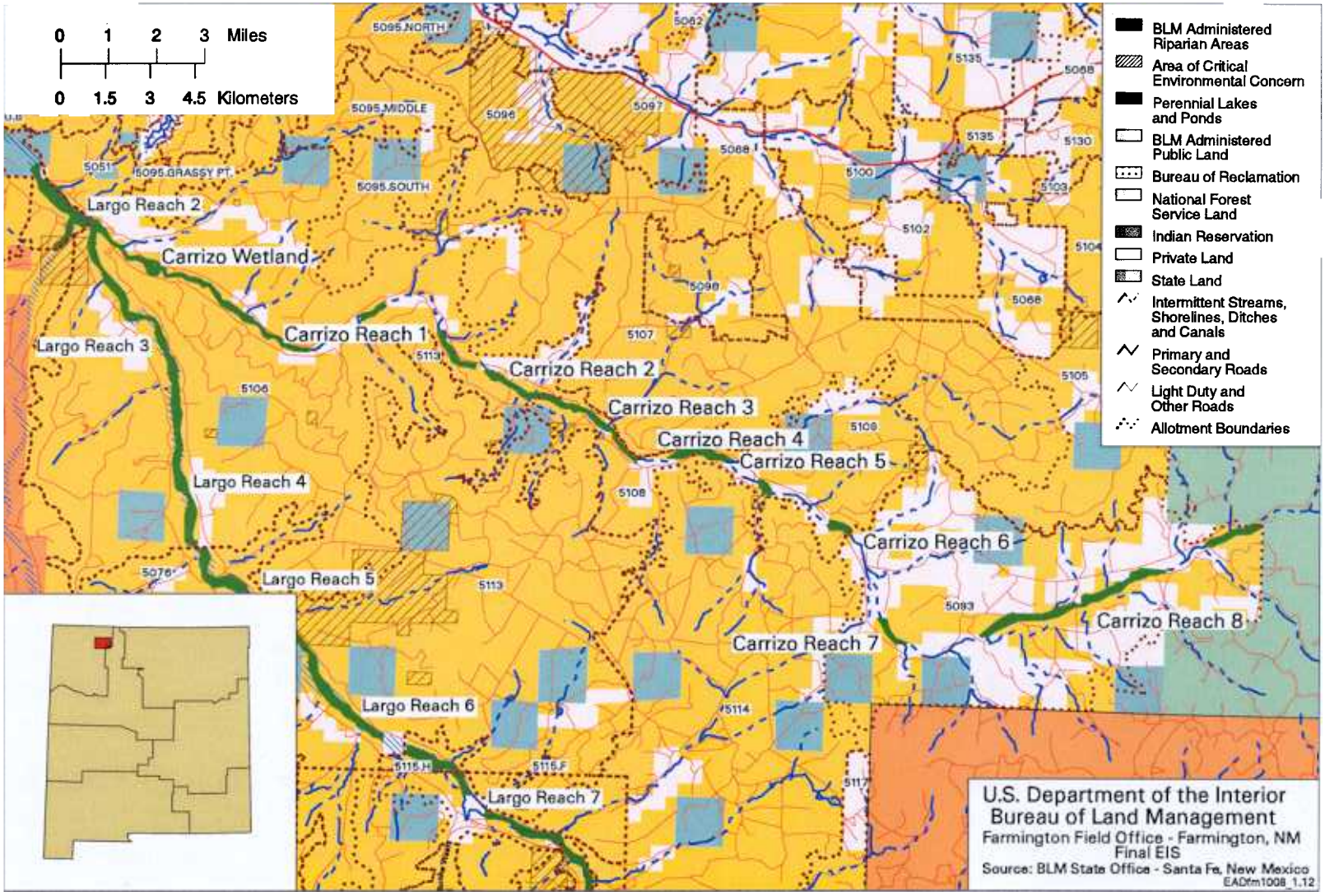


FIGURE 1.12 Carrizo Canyon Riparian Areas, Carrizo Oxbow Wetland, and Largo Canyon

Reach 2: Reach 2 has a length of about 1 mile and is located in Allotment No. 05108. This reach consists primarily of a straight channel through steep cut banks covered with rabbitbrush and greasewood. A few scattered cottonwoods are present at its upper end. The allotment boundary fence is down. This reach has been rated as NF with a downward trend.

Reach 3: Reach 3 has a length of about 3 miles and is located in Allotment No. 05108. A portion of the wash runs through high cut banks with dry-site vegetation. There is no evidence of a floodplain. A few large cottonwoods are present, and there are a few scattered willows. This reach has been rated as NF with a downward trend.

Reach 4: Reach 4 has a length of about 1 mile and is located in Allotment Nos. 05108 and 05109. Extensive regeneration of cottonwoods and willows is occurring below cut banks. Other portions of the bank are unprotected by vegetation and are eroding. This reach has been rated as FAR with an upward trend.

Reach 5: Reach 5 has a length of about 1 mile and is located in Allotment No. 05109; most of the reach is on private land. Slight cottonwood and willow regeneration are occurring, but the reach is mostly a straight run through cut banks with no evident floodplain. A great deal of lateral cutting can also be seen. This reach has been rated as NF with an upward trend.

Reach 6: Reach 6 has a length of about 0.75 mile and is located in Allotment No. 05109. Good willow regeneration and some small areas of cottonwood regeneration are present within this reach. High cut banks are present, but vegetation is starting to grow. This reach has been rated as FAR with a static trend.

Reach 7: Reach 7 has a length of about 0.5 mile and is located in Allotment No. 05093. The reach has good regeneration of willows; cottonwoods are more scarce. High cut banks are present, but the area below the cut banks is starting to regenerate. This reach has been rated as FAR with an upward trend.

Reach 8: Reach 8 is about 5.2 miles long and is located in Allotment No. 05093. Six-foot cut banks are present with no floodplain apparent. The cut banks are covered with dry-site vegetation. No riparian vegetation is present on the banks, but some willows are regenerating on islands. Some cottonwoods are present, but no regeneration is apparent. This reach has been rated as NF with a static trend.

1.2.2.3 Ditch Canyon

The Ditch Canyon area (Figure 1.5) is within Allotment No. 05047. No fences are present in the canyon, and there is no riparian habitat above the boundary of the allotment.

The length of the upper canyon reach is about 4 miles. Three patches of riparian vegetation are present in the upper reach. Portions of the drainage below the main road crossing have spring areas with dense willows, cottonwoods, bulrushes, and a few scattered saltcedar. The three areas of riparian vegetation are interspersed with areas that have upland vegetation. The channel geometry within the reach is diverse, and large cut banks are common in some areas. The upper reach has less erosion because of shallow bedrock that stabilizes the system. The area has a FAR rating with a static trend.

1.2.2.4 Gobernador Canyon

The Gobernador Canyon area (Figure 1.6) has been divided into two reaches. These reaches are located within two grazing allotments: Nos. 05044 and 05087.

Descriptions of the two reaches within Gobernador Canyon are provided below.

Reach 1: Reach 1 is about 1 mile long and is located in Allotment No. 05044. Healthy cottonwoods are present in all age classes and regeneration is occurring. Very few willows are present; the dominant riparian vegetation is saltcedar. The banks of the river are relatively stable with only a small amount of erosion. An excellent growth of sedge and sweet clover is present on the banks. This reach has been rated as FAR with an upward trend.

Reach 2: Reach 2 has a length of about 3.2 miles and is located in Allotment No. 05087. Cottonwoods of all ages are present within the reach. However, there are few willows. The banks support some areas of lush bulrush and sweet clover. Saltcedar is the dominant riparian vegetation. This reach has been rated as FAR with an upward trend.

1.2.2.5 Kutz Canyon

Kutz Canyon has 12 miles of ephemeral streams (Figure 1.7). Reach 1 of Kutz Canyon (approximately the first 4 miles) has been removed from grazing. The remainder of the canyon is within Allotment No. 05072-B. The tract is protected by fences on the northern and eastern boundaries. These fences have been effective, and there is no sign of trespass cattle grazing. There is some light recreational use by hunters and hikers.

The BLM has made a number of habitat improvements in Kutz Canyon, including planting 10 acres in cottonwood poles (saplings) in 1995, 1 acre of container planting in 1996, and a half-acre container planting in 1997. Kutz Canyon was rated FAR, with no trend indicated in 1994.

1.2.2.6 La Jara Canyon

La Jara Canyon (Figure 1.13) is divided into four reaches. Six grazing allotments coincide with these reaches: Nos. 05063, 05135, 05060, 05065, 05066, and 05062.

Descriptions of the four reaches within La Jara Canyon are provided below.

Reach 1: Reach 1 has an overall length of about 0.5 mile and is located in Allotment No. 05063. It is a dry-site with vegetation on bank cuts that lack a floodplain. The vegetation is dominated by saltcedar, although there are also a few scattered willows. The reach was rated as NF with a downward trend.

Reach 2: Reach 2 has a length of about 1.5 mile and is located in Allotment No. 05135. The reach, however, has no fence. The lower half of the reach has no riparian vegetation except for saltcedar. Bulrushes are present in the upper half of the reach. Large cut banks deposit sediment into the stream channel. Point-bar vegetation consists of upland species. This reach was rated as NF with an upward trend.

Reach 3: Reach 3 has a length of about 2 miles and is located in Allotment No. 05060. No fence is present. A few willows are present, but grazing animals have severely impacted them. The dominant species present is saltcedar

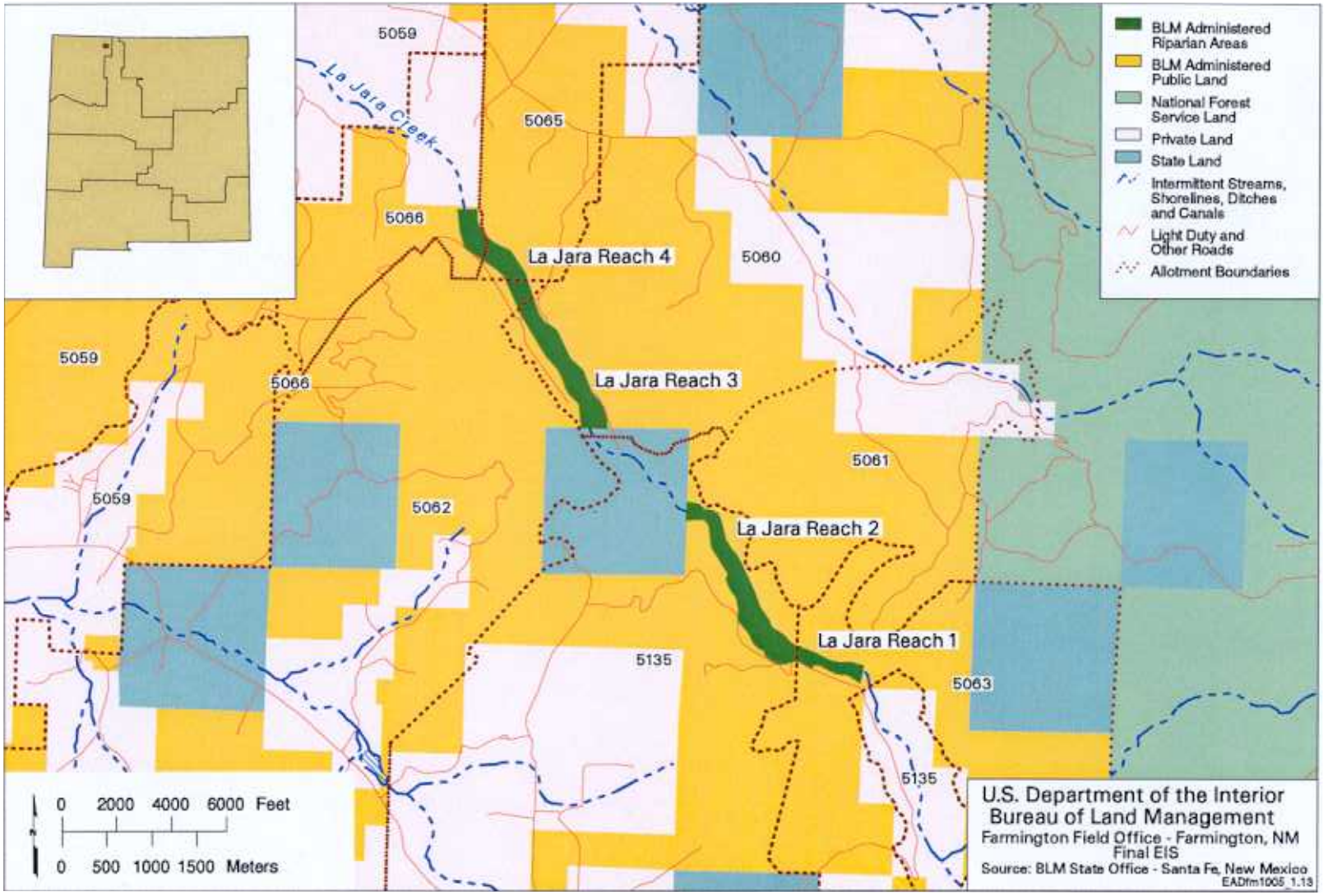


FIGURE 1.13 La Jara Canyon Riparian Areas

with a few dead, dying, and diseased cottonwoods. This reach was rated as NF with a static trend.

Reach 4: Reach 4 has a length of about 1.2 miles. It is part of Allotment Nos. 05062, 05065, and 05066. A few bulrushes are present along with one small cottonwood gallery. Cut banks are in evidence with upland vegetation; no willows are present. This reach was rated as NF with a static trend.

1.2.2.7 Largo Canyon

The Largo Canyon watershed is located in northwestern New Mexico in San Juan, Rio Arriba, and Sandoval Counties (Figures 1.11 and 1.12). The watershed occupies 529,380 acres. There are 433,280 acres of BLM-administered land, 48,000 acres of New Mexico state land, 19,200 acres of Navajo Tribe land (allotted), 20,620 acres of private land in Rio Arriba County, and 8,280 acres of private land in San Juan County (BLM 1997b). About 25% of the land area is privately owned. These private lands are widely scattered, except in Lower Cereza Canyon, where private ownership is more concentrated. There are 37 miles of ephemeral stream riparian habitats on the BLM-administered land.

The watershed is characterized by irregularly shaped steep canyons, sandstone rock outcrops, hills, mesas, plateaus, alluvial fans, and valley bottoms. Vegetation varies from riparian vegetation along the valley and canyon bottoms to pinyon-juniper, upland grass and shrub, and forb species habitat at the higher elevations. Isolated sparse stands of ponderosa pine, aspen, and fir also occur at the higher elevations.

The BLM has subdivided Largo Canyon into 10 reaches. A number of grazing allotments coincide with these reaches, including Nos. 05137, 05106, 05076, 05113, 05094, 05115, 05116, and 05119. An inventory of these reaches was performed in 1994 to evaluate the conditions of the riparian habitats (BLM 1994b). No trends were noted in that survey.

The BLM has initiated a number of improvements in Largo Canyon, including planting 5 acres in cottonwood poles in 1995, planting 2 acres in cottonwood poles in 1996, digging nine potholes in 1996, and performing mechanical saltcedar control on 10 acres in 1998.

Descriptions of the 10 reaches within Largo Canyon are provided below.

Reach 1: Reach 1 covers about 4 miles and is wholly contained within Allotment No. 05040.B. Mature cottonwoods are present. Willows are rare, and the riparian vegetation consists primarily of saltcedar and Russian olive trees. Some islands and shorelines are showing good willow regrowth, which is short, but dense in some places. Most willows have been browsed. The reach was rated as FAR with a static trend.

Reach 2: Reach 2 has a length of about 0.75 mile and is dominated by the presence of saltcedar. It is in Allotment Nos. 05040.B and 05051. Few cottonwoods are present, and excessive deposition of sediment was noted. The reach was specified as FAR with a static trend.

Reach 3: Reach 3 extends for 1 mile in Allotment No. 05106. Drainage in the reach is wide and ditch-like, and a few saltcedar are below the high bank cuts. Strong deposition was present from Cutter Wash and pipeline construction crossing the wash. The reach was specified as NF with a downward trend.

Reach 4: Reach 4 has a length of about 7 miles and is part of Allotment No. 05106. Good willow regrowth was evident, with some dense stands present. Overall, the vegetation composition and vigor were good. The reach was rated FAR with an upward trend.

Reach 5: Reach 5 has a length of about 2.7 miles and is in Allotment Nos. 05076 and 05113. Point bars in the main channel have annual plants. High cut banks show evidence of previous cutting of marshy areas along the riparian zone. Reach 5 was rated as FAR with an upward trend.

Reach 6: Reach 6 has a length of approximately 4 miles and is in Allotment No. 05113. Pockets of sedge, reed grass, and willows occur. In addition, large, unvegetated islands and point bars are present. There is good regeneration of cottonwoods and willows. The riparian zone is increasing in width in this reach. This reach was rated as FAR with an upward trend.

Reach 7: Reach 7 has a length of about 3.5 miles and is partly located in Allotment No. 05115.H. This reach has excellent cottonwood and willow regeneration. Most point bars only support annual vegetation. Some downcutting has occurred because of erosion. This reach was rated as FAR with an upward trend.

Reach 8: Reach 8 is about 6 miles long and is located in Allotment No. 05116. Fenceline vegetation is not well developed. The stream channel is incised, and there is no riparian zone. However, dense stands of saltcedar are present. This reach was rated as NF with a downward trend.

Reach 9: Reach 9 has a length of about 3 miles and is in Allotment No. 05119.3. There is little evidence of riparian vegetation. The stream is very wide and barren. Dense stands of saltcedar with little diversity occur. However, some small areas of riparian species regeneration occur. This reach was rated NF with an upward trend.

Reach 10: Reach 10 has a length of about 5 miles and is in Allotment No. 05119.3. No cottonwoods are present, and few patches of good willow cover are found. The vegetation is dominated by saltcedar. This reach has a rating of FAR with a static trend.

1.2.2.8 Palluche Canyon

Palluche Canyon has been divided into five reaches (Figure 1.14). Reaches 1, 2, and 3 are not contained within any grazing allotment. Reaches 3 and 5 are contained within Allotment No. 05119. However, the Navajo Nation has agreed to emphasize wildlife and riparian ecological values and relinquish grazing preference in this allotment.

The BLM has initiated a number of improvements in upper Palluche Canyon, including the following: the area was retired from grazing on Allotment No. 05119 in 1996; plantings were made (50 New Mexico olives, 300 cottonwood poles, 200 coyote willows, and 100 smooth sumacs); 25 acres of wash bank and islands were planted with grasses and forbs; 5 potholes were blasted; 200 acres of sage in the uplands were treated with tebuthiuron; and 10 acres of saltcedar were treated with a herbicide.

Descriptions of the five reaches within Palluche Canyon are provided below.

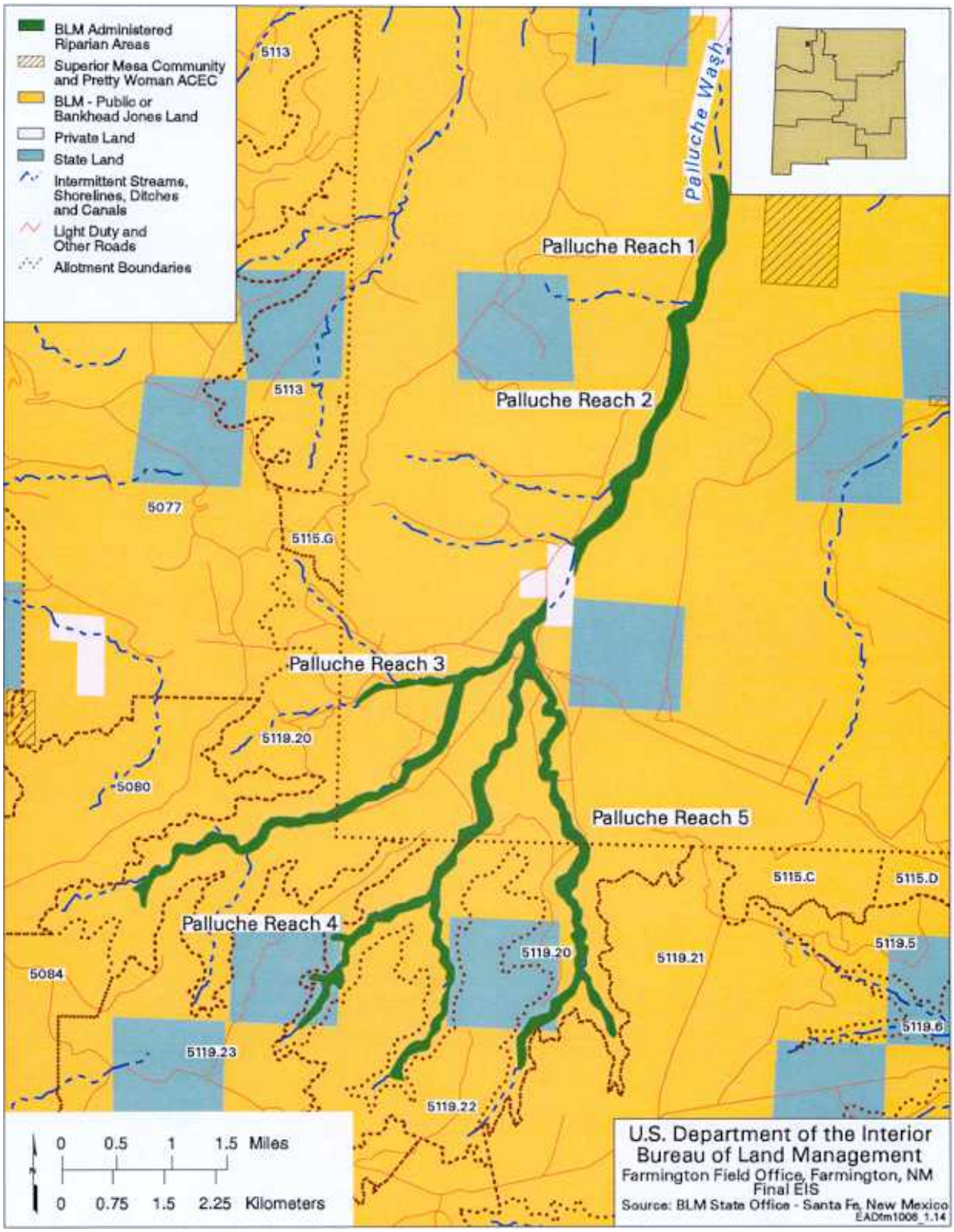


FIGURE 1.14 Palluche Canyon Riparian Areas

Reach 1: Reach 1 has a length of about 2.5 miles and is not located in a grazing allotment. Mostly upland, dry-site vegetation is present, and there is no evidence of a floodplain. A few remnant willows, cottonwoods, and a small number of saltcedar occur. This reach has been rated as NF with a static trend.

Reach 2: Reach 2 has a length of about 1.5 miles and was retired from grazing in 1996. Saltcedar is present, and a few willow are located on point bars. Large bank cuts are covered with upland vegetation. This reach has been rated as NF with a static trend.

Reach 3: Reach 3 is approximately 5 miles long and is not located in a grazing allotment. In some places, banks are too high to be reached by floodwater. In other areas, the riparian zone is widening. Some young willows are present, as are scattered, very old cottonwoods. The riparian plant vigor is low. This reach was rated as FAR with an upward trend.

Reach 4: Reach 4 is approximately 7.5 miles long and is no longer grazed as part of Allotment No. 05119. This reach shows evidence of extreme downcutting and channelization. Old cottonwoods are present, but no willow or saltcedar are present. This reach has been rated as NF with a downward trend.

Reach 5: Reach 5 has a length of about 2.5 miles and is no longer grazed as part of Allotment No. 05119. No riparian vegetation or floodplain is present. Excessive gullying is occurring. This reach has been rated as FAR with a downward trend.

1.2.2.9 Simon Canyon

A riparian area exists along 4 miles of Simon Canyon above a natural spring (Figure 1.6). Only dry-site vegetation occurs upstream of this spring, and there may not be enough water to support a riparian habitat, (although subsurface water is present). The system carries large quantities of floodwater in large event, low-frequency storms and is bounded by steep canyon walls.

Grazing is allotted in the upper reach (Allotment No. 05055). In the lower reach, grazing is not allotted, although wild ungulates are active in the area.

This reach was rated as NF with a static trend because of the absence of bank-stabilizing vegetation.

1.2.3 Wetlands

The Carrizo Oxbow (Figure 1.12) is the only specified wetland area included in this Final EIS (FEIS). It covers about 15 acres. Species present consist of cottonwoods, willows, cattails, sedges, and some bulrushes. Some regeneration of cottonwoods and willows is evident. The extent of the ponded surface water varies from about 1 to 3 acres, depending on the time of the year. In places, a thin layer of salt was encountered on the top of the soil. This salt was derived from evaporation of water that had a high mineral content.

As of July 1998 (BLM 1998c), the Carrizo Oxbow had a PFC rating with no apparent trends.

1.3 RELEVANT CONSTRAINTS

Various laws, policies, program guidance, and management plans that apply to preparation of this HMP include, but are not limited, to the following:

- The *Farmington Resource Management Plan* (BLM 1988), including all relevant decisions affecting actions and developments in riparian areas;
- Executive Order 11988 - Floodplain Management (May 24, 1977);
- Executive Order 11990 - Protection of Wetlands (May 24, 1977);
- The Taylor Grazing Act, which directs the Secretary of the Interior to stop injury to the public lands by preventing overgrazing and soil deterioration;
- The Federal Land Policy and Management Act, which requires that the public lands be managed in a manner that will protect the quality of ecological, environmental, and water resources, and that, where appropriate, will preserve and protect certain public lands in their natural condition to provide food and habitat for fish and wildlife;
- The Public Rangelands Improvement Act, which directs improvement of rangeland conditions:
- The Clean Water Act, which has as objectives the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water at a level of quality that protects fish, shellfish, wildlife, and recreational use;
- The Endangered Species Act, which specifies consultation with the U.S. Fish and Wildlife Service (USFWS) regarding actions that could affect federally listed threatened or endangered species of plants and animals;
- Department of the Interior and BLM policy to maintain, restore, or improve riparian-wetland ecosystems to achieve a healthy and PFC that ensures a biological diversity, productivity, and sustainability;
- *BLM Manual Transmittal Sheet: 1737–Riparian-Wetland Area Management* (BLM 1992b);
- BLM Technical References (TRs) on Riparian Area Management 1737-3 and 1737-5 through 1737-15 (BLM 1989; 1990; 1992a,c; 1993a,c; 1994a,c; 1996a,b; 1997a; 1998a).
- The Farmington Field Office *Southwestern Willow Flycatcher Management Plan* (BLM 1998b), which relates specifically to the management of habitat, including riparian-wetland areas, for that endangered species.

1.4 SIKES ACT AUTHORITY

This plan has been written to meet the requirements of the Sikes Act (Public Law 93-452) and will be implemented under the authority of the Sikes Act. This plan has been developed to meet the policies and guidance outlined in the MOU between the BLM and the New Mexico Department of Fish and Game (NMDG&F) (MOU-NM-232 [1990]) and the Cooperative Agreement among the U.S. Department of Agriculture Forest Service, the NMDG&F, and the BLM on implementation of the Sikes Act (Agreement No. 14226910A 980006 [1998]).

2 LAND STATUS AND ADMINISTRATION

2.1 LAND STATUS

The distribution of BLM-administered riparian areas and the status of land jurisdiction throughout the Farmington Field Office are shown in Figures 1.1 and 1.4. Individual riparian, wetland, and spring-seep areas under BLM jurisdiction are shown in context with lands under the jurisdiction of others in Figures 1.5 through 1.14.

2.2 ADMINISTRATION

Information related to BLM-administered riparian areas in the Albuquerque Field Office is provided in Table 1.1.

3 HABITAT MANAGEMENT

3.1 APPROACH

This HMP combines the structural components of BLM Manual 6780 with Alternative 2 (Adaptive Management) of the Draft EIS (DEIS) (BLM 1999) to develop the management approach, planned actions, evaluation and monitoring, and HMP progress reporting contained in BLM Manual 6780 (BLM 1981). Specific information related to individual riparian areas from BLM files, as well as from comments received on the analysis in the DEIS, were also used. The BLM Riparian Area Management TR Series 1737 was used, where appropriate, to provide technical guidance on the field activities required to implement the HMP. For example, TR 1737-14, *Grazing Management for Riparian-Wetland Areas* (BLM 1997a), provides specific information on the probable response of brushy species regrowth potential to different grazing strategies.

By using the adaptive management approach and specific field activity and guidance, the HMP provides a road map for achieving specific desired future conditions for all riparian habitats that occur within the Farmington Field Office. However, like all road maps, the HMP allows field office staff to respond to changes as new information is developed and the need to adjust to new conditions (management directions) arises.

Under the adaptive management strategy, the BLM will assign a high priority to implementing those management practices identified in current BLM management guidance for restoring and protecting all riparian habitats under BLM jurisdiction. For riparian areas, this alternative will require a specific focus on riparian management, and decisions regarding other land management activities will be constrained to limit or prevent adverse impacts on riparian areas.

An adaptive management framework represents a proactive approach to planning and implementing strategies for restoring and protecting riparian habitats on the basis of a set of activities intended to achieve measurable improvement of riparian habitat and function. The management actions will be implemented irrespective of other public land administrative actions or functions. Riparian management will receive staffing and budget resources independent of other Farmington Field Office business requirements or work tasks. The HMP is based on the concept that riparian habitats are critical elements in the landscape, and that specific management actions are necessary to enable them to function at their full potential. BLM policy, direction, and guidance are specifically formulated to accomplish this objective and prescribe a set of comprehensive practices for riparian and aquatic habitat management.

Implementation of adaptive management practices will involve the following procedures:

Step 1: Survey and analyze riparian conditions,

Step 2: Use survey results to describe a desired future condition and to identify appropriate management actions,

Step 3: Implement management actions,

Step 4: Monitor the success of the management actions, and

Step 5: Modify management actions, if necessary, on the basis of the monitoring results.

The ordered sequence of these procedures describes an adaptive management approach that provides a means of changing management

activities when monitoring data show that current actions are no longer required, or when current actions are not achieving a desired restoration or enhancement goal as specified in Step 2. All information is collected and analyzed to determine success in achieving the endpoints associated with (1) PFC and (2) a desired vegetation composition and structure. The tasks will be carried out for each riparian area (as well as any future riparian areas that would be administered by the Farmington Field Office) on the basis of the site-specific characteristics and a desired future condition. When adaptive management practices are being implemented, the development of new management actions will be derived from the results of baseline riparian area surveys and analyses.

The specific field activities for implementing the HMP are derived from BLM TR Series 1737.

3.2 MANAGEMENT OBJECTIVES

Because the HMP represents a dynamic process of data collection, assessment of riparian conditions based on data analysis, and continuing evaluation of the ability to meet defined goals, management objectives will be achieved from completion of the following two tasks.

Survey and Analyze Riparian Conditions: Baseline data collection and analysis will follow the guidelines of BLM TR 1737-11 (*Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas*) [BLM 1994a]) and 1737-15 (*A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas*) [BLM 1998a]). The Farmington Field Office will develop an implementation plan (including schedule, budget, and quality control measures) and conduct all field surveys necessary for determining the current condition of each specified riparian and wetland area. This action will result in a written determination (available to the public) of the status of riparian habitat conditions, including natural and human-caused conditions. Part of the summary and analysis of riparian conditions will be based on the findings of previous riparian surveys and data collection efforts.

Define a Desired Future Condition and Required Management Actions: Results of the survey and analysis of riparian conditions will be used to define and develop the desired future condition of individual riparian segments administered by the BLM Farmington Field Office. Defining the desired future condition will take into account (1) potential vegetation communities that could develop at the site; (2) erosion and deposition conditions; (3) current activities that may be detrimental to achieving PCF; (4) the ability of the area to develop and support threatened and endangered species habitat; (5) the characteristics of the surrounding land use; (6) potential use conditions that could be accommodated at the site; and (7) management actions needed to restore and/or protect the long-term ecological condition of the riparian segments, wetlands, or seeps. Included in the definition of the desired future condition will be a list of measurable endpoints that can be monitored to determine the status of the riparian ecosystem over time. Finally, a set of management goals will be developed to assist in determining the required budget and staffing needs for implementing the riparian and aquatic HMP.

3.3 PLANNED ACTIONS

Table 3.1 lists the general types of management activities that could be implemented by the Farmington Field Office, depending on the findings developed under the baseline data

TABLE 3.1 Riparian Area Management Practices

Practice	Objective	Comment
Fencing	Isolate degraded habitats	Consider big-game migration, public access, beaver activity, falling trees, and vehicles.
Prescribed burns	Modify vegetation communities	Primarily for upland areas; prudent use in areas of special concerns (e.g., endangered species).
Forestry practices	Improve woody vegetation communities	Cover or canopy manipulation of coniferous and deciduous stands, woody debris, and slash management.
Vegetation plantings	Reestablish native communities	Cuttings work well for woody vegetation; insert below water table; seeding generally takes place in the fall or spring; rake after application.
Opportunities from mineral activities	Mitigate mineral exploitation effects	Reclaim to utilize beneficial runoff or drainage; riparian habitat development in association with evaporation ponds; water spreaders to direct runoff from road construction.
Structures	Control erosion	Bank protection, gradient restoration, water energy-transfer structures, sediment traps, spring developments, removal or modification of channelization structures, etc.
Beaver complex cycling	Transform pioneer woody vegetation into riparian community	Cycling of beaver complexes; special management to maximize vegetation regrowth rates; maximize initial construction population followed by reductions for maintenance levels.
Bank stabilization	Accelerate soil and water conservation efforts	Anchoring green trees (or discarded Christmas trees) into banks; log structures (10–12 in. diameter) at base of bank; rock in wire baskets (gabions).
Recreation planning	Protect, manage, and improve habitats	Maintain visitor compliance; retain vegetation; locate sites outside of riparian areas; prohibit vehicles from uncontrolled stream access; plant dense vegetation to screen and reduce use of sensitive areas; install signs; designate sites within riparian areas.
Road relocation, construction, and maintenance	Protect, manage, and improve habitats	Locate outside of riparian area; prohibit vehicles from leaving roads; install signs; minimize impact to stream bank and vegetation; revegetate disturbed areas; design and maintain culverts to allow fish passage and free debris flow; haul waste material away.

TABLE 3.1 (Cont.)

Practice	Objective	Comment
Public education	Provide information to public land users on protection methods	Develop environmental education and interpretative displays designed to direct visitor or user behavior in or adjacent to riparian areas.
Road surfacing	Protect riparian habitats from siltation	Apply crushed rock surfacing material in accordance with BLM standards to roads from which runoff could result in siltation of riparian areas.
Drainage facilities	Protect riparian habitats from siltation	Install culverts in accordance BLM standards on roads from which runoff could result in siltation of riparian areas.
Well pad rehabilitation	Protect riparian habitats from siltation	Revegetate areas disturbed for well pad construction that are not protected by surfacing and areas that are disturbed by well pad restoration.
Rights-of-way	Protect riparian habitats from siltation	Revegetate areas disturbed by construction in the well field and support facility rights-of-way to prevent erosion and subsequent deposition in riparian areas.

Source: BLM (1992a).

collection and written baseline determination. The activities cited include a summary of management techniques outlined in BLM TR 1737-6 (*Management Techniques in Riparian Areas* [BLM 1992a]). In addition, the Farmington Field Office will continue to implement current management activities that are consistent with the requirements identified under Step 1: Survey and Analyze Riparian Conditions.

Management activities will also include specific grazing management protocols that will be established for each riparian area on the basis of guidance provided in BLM TR 1737-14 (*Grazing Management for Riparian-Wetland Areas* [BLM 1997a]). The protocols will be implemented for all allotments that include riparian and wetland habitats. The protocols will include one or more of the following grazing treatments:

- *Riparian Pasture:* Establish a combination of upland and riparian vegetation that would be managed as one unit within a larger allotment.
- *Winter Grazing:* Allow limited grazing in riparian areas when the vegetation is dormant.
- *Long-Term Rest:* Defer grazing from riparian areas for a period of approximately 10 years. During the 10-year period, collect vegetation and erosion data to determine if riparian pastures or winter grazing may be established. Additional monitoring

during the 10-year period will be conducted to determine the status of other riparian endpoints such as endangered species habitat or soil erosion conditions.

- *Total Exclosure:* Exclude livestock use permanently.

3.4 EVALUATION AND MONITORING

The Farmington Field Office will develop a written monitoring plan as part of the HMP. The monitoring plan will include schedule, data collection protocols, measurement endpoints, and management outcomes for all riparian and wetland habitats. The monitoring plan will use guidance material in BLM TRs 1737-7 through 1737-9 (BLM 1992c; 1993a,c) and 1737-11 through 1737-15 (BLM 1994a; 1996a,b; 1997a; 1998a). The monitoring results will be used to determine the success of the management actions and to develop recommendations. The monitoring plan will include procedures that will enable the Farmington Field Office to identify and/or quantify the following conditions:

- Desired condition of riparian vegetation, with an estimate of vegetation structure and species composition;
- Erosion and deposition conditions within the riparian area;
- Status of threatened and endangered species;
- Threats and opportunities from surrounding land uses;
- Status of domestic livestock grazing;
- Status of management actions taken to date;
- Wildlife use of the riparian area;
- Recreational use of the riparian area;
- Success of public education tools to effect changes in human use of riparian areas; and
- Estimated time remaining to meet stated protection and enhancement goals for the riparian habitat developed under Step 1.

Implementation of an adaptive management approach requires a commitment to modifying riparian habitat management activities if monitoring shows that the proposed desired future condition would not be achieved if the current set of management activities were to be continued in the future. Provision for modifying management activities builds positive feedback capabilities into the HMP. In addition, modifications potentially allow use conditions to change as (1) riparian habitat conditions improve (achieving PFC), and (2) vegetation conditions indicate that plant community processes have become stable, thus, pointing to positive future conditions (e.g., succession, elimination of nonnative species, reproduction of desired native species).

3.5 IMPLEMENTATION

Current and planned management of the riparian and wetland areas in the Farmington Field Office can be described in terms of the adaptive management tasks. For example, site visits by interdisciplinary teams of trained specialists to assess the functioning condition of riparian areas applies to adaptive management

Step 1. Defining PFC as the desired future condition of an individual riparian area addresses adaptive management Step 2. Additional actions may be required to implement adaptive management for specific riparian areas. For example, a monitoring plan may have to be developed to comply with adaptive management Step 4. Table 3.2 describes current management actions and their relationship to the adaptive management tasks, as well as additional planned actions for each of the riparian and wetland areas.

The Farmington Field Office will implement the HMP model by systematically applying the five adaptive management steps to riparian and wetland areas located on public lands administered by the BLM. Within the framework of the HMP model, management actions will be based upon the site-specific characteristics of each riparian area. Because each riparian area is composed of a unique set of hydrological, ecological, soil, and human use characteristics (see Sections 1.2.1, 1.2.2, and 1.2.3), the adaptive management approach will allow management flexibility in achieving PFC and restoration and protection of threatened and endangered species habitat. Because the HMP utilizes an adaptive management framework, the site-specific ecosystem dynamics that control the natural functions of each riparian area will be continually monitored to ensure that stewardship goals are achieved. Planned management actions can be modified in order to maintain and or restore the necessary ecological and hydrological properties of each riparian area. A routine monitoring program will be a component of the planned actions and will provide Farmington Field Office staff with the data required to make future management decisions.

Table 3.2 presents the set of planned management and monitoring actions the Farmington Field Office will undertake for each riparian area. Past and ongoing management actions, in combination with the most recent survey data for each riparian area, provide the context for the planned management actions. In addition, if riparian areas contain current or potential habitat conditions for threatened and endangered species, planned management actions have been designed to protect and enhance habitat for these species, especially since these actions relate to establishing vegetation communities that could support southwestern willow flycatchers. Indeed, key objectives of the planned management actions are the restoration and maintenance of riparian vegetation conditions.

The tasks and activities described in Table 3.2 do not require the use of new or enhanced methodologies for determining the current condition of riparian habitats, estimating future potential condition, developing required management practices, or conducting monitoring activities. Rather, implementing the HMP will involve the use of well-documented riparian management and monitoring procedures (see Section 3.1) within the context of an adaptive management strategy. For example, site visits by interdisciplinary teams of trained specialists from the Farmington Field Office will assess the functioning condition of individual riparian areas in order to implement adaptive management Step 1 (Survey and Analyze Riparian Conditions). A desired future condition of PFC and restoration of threatened and endangered species habitat are addressed under adaptive management Step 2 (Define a Desired Future Condition and Required Management Actions). In addition, a monitoring plan will be developed to comply with adaptive management Step 4 (Monitor the Success of Management Actions). Because riparian conditions are a function of variable climatic, meteorological, and ecological conditions and ongoing management actions, monitoring results could show the need for additional or modified management actions to maintain or meet the desired future condition for each riparian area. The HMP model allows the Farmington Field

TABLE 3.2 Current Management Actions and Adaptive Management Tasks for the Riparian-Wetland Areas Administered by the Farmington Field Office

		Adaptive Management Tasks				
Riparian Areas	Current Management Practices and Activities	Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Animas River						
Tract 1	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - U	Continue to exclude domestic livestock grazing, potential short-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 3	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - D	Continue to exclude domestic livestock grazing, potential short-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 8	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - D	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
San Juan River						
Archuleta	Dormant season grazing.	PFC rating (1998): PFC - NA	Limit domestic livestock grazing, potential long-term SWF habitat.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Blanco	Dormant season grazing.	PFC rating (1998): PFC	Continue to defer domestic livestock grazing, potential short-term SWF habitat.	Maintain fences.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Bloomfield	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - U	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Bradshaw	Dormant season grazing.	PFC rating (1998): FAR - U	Continue to defer domestic livestock grazing, currently potential SWF habitat.	Maintain fences.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Bull Calf	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - U	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Desert Hills	Exclosure fence excludes domestic livestock from grazing SWF habitat.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing from SWF habitat, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Gallegos	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1994): FAR - S	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Jewett Valley	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Kutz	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - D	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
La Plata River Tract	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential short-term SWF migration, potential long-term SWF nesting.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
La Plata River						
Tract 1	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 2	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Tract 3	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 4	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish vegeta-tion transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 5	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 6	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 7	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1994): FAR	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 8	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Tract 9	No authorized domestic livestock grazing.	PFC rating (1994): FAR	Potential long-term SWF habitat.	A recreation and public purposes lease is pending with the City of Farmington to jointly manage the tract for recreation and wildlife habitat.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Tract 10	No authorized domestic livestock grazing.	PFC rating (1998): PFC	Potential long-term SWF habitat.	A recreation and public purposes lease is pending with the City of Farmington to jointly manage the tract for recreation and wildlife habitat.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Pump Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Reach 2	Dormant season grazing.	PFC rating (1994): PFC	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Reach 3	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 4	Dormant season grazing.	PFC rating (1994): FAR	Continue to defer domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish vegetation transect and photopoint.	Results from SWF surveys will be used to evaluate future required actions.
San Juan River						
Santa Rosa	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - S	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Schneider	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Simon Canyon	No authorized grazing.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
South Bloomfield						
N. Bank	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
S. Bank	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Subdivision	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - NA	Continue to exclude domestic livestock grazing, potential short-term SWF migration, marginal SWF nesting habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Valdez	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): FAR - NA	Continue to exclude domestic livestock grazing, potential short-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions, evaluate restoration and adjust, if necessary.
Wheeler	No authorized grazing, fenced to exclude domestic livestock in 2000.	PFC rating (1998): PFC - D	Continue to exclude domestic livestock grazing, potential long-term SWF habitat.	Maintain fences.	Establish photopoint.	Results from SWF surveys will be used to evaluate future required actions.
Blanco Reach	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Carrizo Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 2	Dormant season grazing.	PFC rating (1994): NF - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 3	Dormant season grazing.	PFC rating (1994): NF - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 4	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 5	Dormant season grazing.	PFC rating (1994): NF - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 6	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 7	Proposed decision on dormant season grazing has been protested.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 8	Proposed decision on dormant season grazing has been protested.	PFC rating (1994): NF - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Ditch Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Gobernador Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 2	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Kutz Canyon						
Reach 1	No authorized grazing.	PFC rating (1994): FAR - S	Continue to exclude domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 2	Dormant season grazing.	PFC rating (1994): FAR - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
La Jara Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): NF - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 2	Dormant season grazing.	PFC rating (1994): NF - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 3	Dormant season grazing.	PFC rating (1994): NF - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 4	Dormant season grazing.	PFC rating (1994): NF - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Largo Canyon					Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 1	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.
Reach 2	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 3	Dormant season grazing.	PFC rating (1994): NF - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season. Salt cedar control.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.
Reach 4	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 5	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.
Reach 6	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 7	Dormant season grazing.	PFC rating (1994): FAR - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.
Reach 8	Proposed decision on dormant season grazing has been protested.	PFC rating (1994): NF - D	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 9	Dormant season grazing.	PFC rating (1994): NF - U	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season. Three acres of cottonwood planting within new exclosure.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.
Reach 10	Dormant season grazing.	PFC rating (1994): FAR - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season. 0.5 acres of cottonwood plantings in new exclosure.	Riparian study (see text) will include vegetation transects and photopoints in each reach of Largo Canyon.	The results of the riparian study for Largo Canyon will be used to implement long-term restoration management actions in all of Largo Canyon. Evaluate grazing strategy (see text), implement changes if necessary.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Palluche Canyon						
Reach 1	Dormant season grazing.	PFC rating (1994): NF - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.
Reach 2	Dormant season grazing.	PFC rating (1994): NF - S	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season. Seven acres of cottonwood plantings fenced to prevent wildlife grazing.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary; use the results of the exclosure treatments to determine management actions applicable to Palluche Canyon.
Reach 3	No authorized grazing.	PFC rating (1994): FAR - U	Continue to exclude domestic livestock grazing.	Cottonwood and willow plantings, reseeding riparian area.	Establish photopoint.	Monitor restoration activities.
Reach 4	No authorized grazing.	PFC rating (1994): NF - D	Continue to exclude domestic livestock grazing.	Three sumps for water to be used by wildlife, vegetation plantings.	Establish photopoint.	Evaluate wildlife developments and use results at other locations.

TABLE 3.2 (Cont.)

Riparian Areas	Current Management Practices and Activities	Adaptive Management Tasks: Survey and Analyze Riparian Areas[a]	Define Required Management Actions	Implement Management Actions	Monitor Management Actions	Modify Management Actions, If Necessary
Reach 5	No authorized grazing.	PFC rating (1994): FAR - D	Continue to exclude domestic livestock grazing.	Water development (pond) for wildlife use, close roads.	Establish photopoint.	Evaluate wildlife developments and use results at other locations.
Simon Canyon	No authorized grazing.	PFC rating (1994): NF - S	Continue to exclude domestic livestock grazing.	Monitor livestock access.	Establish photopoint.	Monitor livestock access.
Carrizo Oxbow	Dormant season grazing.	PFC rating (1998): PFC - NA	Limit domestic livestock grazing.	Domestic livestock grazing allowed only during the dormant season. Each grazing permit will stipulate the specific grazing regime and intensity allowed during the dormant season.	Establish photopoint.	Evaluate grazing strategy (see text), implement changes if necessary.

[a] D = downward trend; FAR = functional-at-risk; NA = no apparent trend; NF = nonfunctional; PFC = proper functioning condition; S = static; SWF = southwestern willow flycatcher; U = upward trend.

Office to incorporate adjustments in riparian management actions in response to new or changing conditions in each riparian area (Step 5: Modify Management Actions).

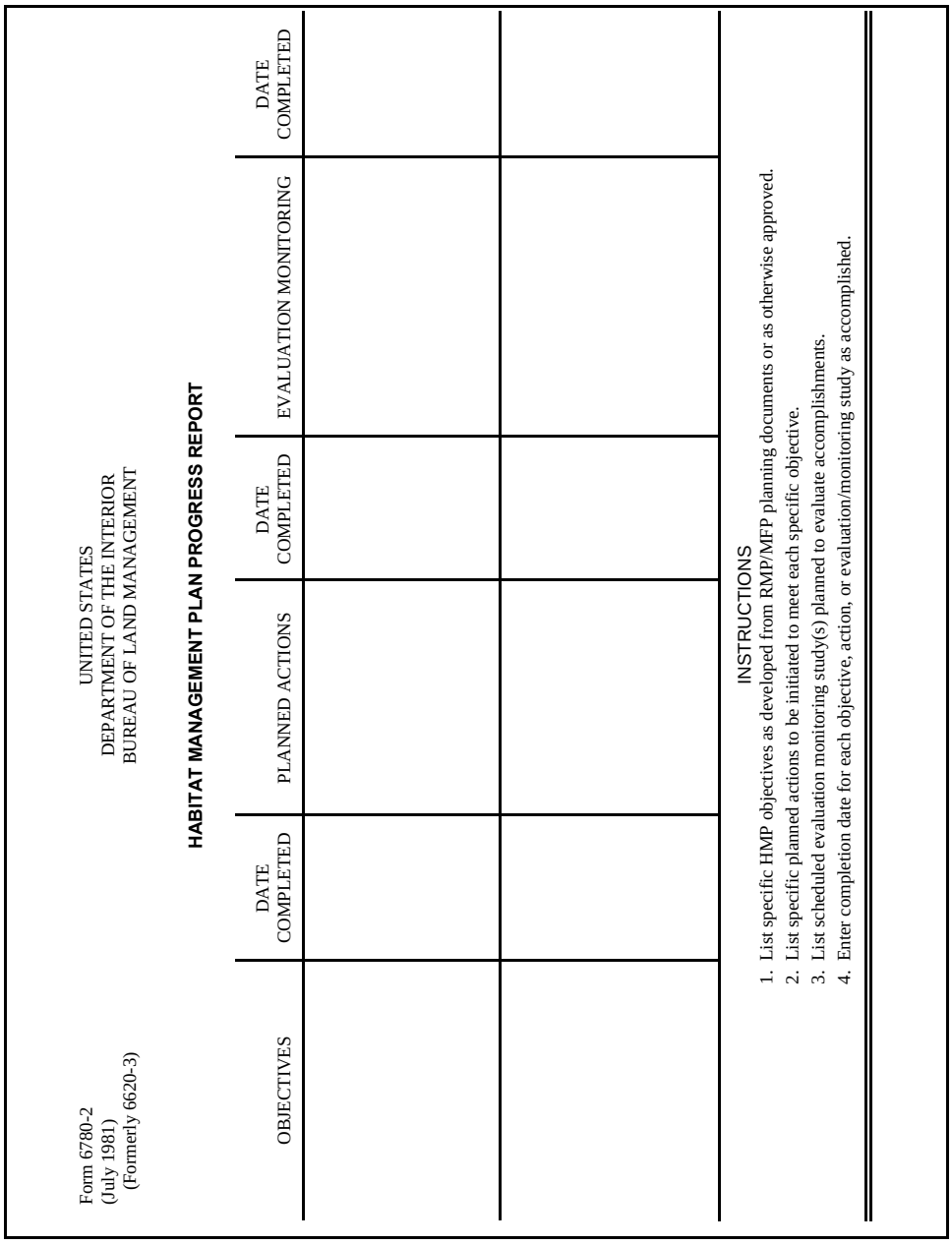
3.6 PROGRESS REPORTING

Adaptive management includes built-in features for evaluating and monitoring the progress and success of implemented management practices and for modifying them as necessary to ensure accomplishment of desired results. As the management actions presented in Table 3.2 for each riparian area are prescribed, implemented, and evaluated; documentation will be accomplished with the use of BLM Form 6780-2, Habitat Management Plan Progress Report (Figure 3.1) (BLM 1981).

Illustration 4
Form 6780-2
(.31If3)

6780 - HABITAT MANAGEMENT PLANS

Habitat Management Plan Progress Report



Form 6780-2
(July 1981)
(Formerly 6620-3)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HABITAT MANAGEMENT PLAN PROGRESS REPORT

OBJECTIVES	DATE COMPLETED	PLANNED ACTIONS	DATE COMPLETED	EVALUATION MONITORING	DATE COMPLETED

INSTRUCTIONS

1. List specific HMP objectives as developed from RMP/MFP planning documents or as otherwise approved.
2. List specific planned actions to be initiated to meet each specific objective.
3. List scheduled evaluation monitoring study(s) planned to evaluate accomplishments.
4. Enter completion date for each objective, action, or evaluation/monitoring study as accomplished.

FIGURE 3.1 BLM Form 6780-2: Habitat Management Plan Progress Report (Source: adapted from BLM 1981)

4 COORDINATION WITH OTHER BLM PROGRAMS, OTHER AGENCIES AND ORGANIZATIONS, AND THE PUBLIC

Riparian and aquatic habitat program management is traditionally accomplished in the BLM through coordination with other resource management programs; for example, by modifying domestic livestock grazing practices or limiting mineral development activities in or adjacent to riparian areas. Not only will that type of coordination continue, but this HMP also places special emphasis and priority on improving and protecting riparian areas by identifying management actions that may be implemented separately from other programs. These could include conducting scientific studies and analyses, manipulating vegetation composition, and installing bank stabilization facilities to accomplish specific riparian management objectives. Close coordination with other BLM programs in implementing these actions is critical to ensuring their success and maximizing their effectiveness.

This HMP was developed with the assistance of an interdisciplinary team of BLM resource program specialists to begin the necessary coordination process. It is important that this coordination within BLM continue as implementation of the HMP proceeds.

Organizations external to BLM that were consulted during preparation of this HMP include the USFWS and the NMDG&F. In addition, other organizations that were informed or contacted during the preparation of this HMP included the New Mexico Congressional delegation, the Governor's Office, county government offices, other state and federal agencies, state academic institutions, and several nongovernmental organizations. A complete list of all organizations involved is contained in the *DEIS for Riparian and Aquatic Habitat Management in the Farmington Field Office – New Mexico* (BLM 1999). In addition, the general public was invited to review and comment on the DEIS; the results of that involvement are documented in Volume 1 of this FEIS.

5 WILDLIFE ECONOMICS

The goal of riparian-wetland area management described in this HMP is to maintain, restore, improve, protect, and expand the riparian habitats in the Farmington Field Office so that they are in PFC for their productivity, biological diversity, and sustainability. When riparian-wetland areas are functioning properly, they exhibit healthy characteristics that contribute positively to the sustainability of natural systems. The benefits of these contributions include the following:

- Purifying water by removing contaminants;
- Reducing the risk of flooding and associated damage;
- Reducing stream channel and stream bank erosion;
- Increasing available water and stream flow duration by holding water in stream banks and aquifers;
- Supporting a diversity of plant and wildlife species, including endangered species; and
- Maintaining habitat for healthy fish populations, including endangered species.

In its 1997 *Public Records from Public Lands* document (BLM 1997c), the BLM states that:

> While commodity-related activities on the public lands generate economic benefits, so too does the conservation of public land resources. *Money Magazine's* annual survey of the best places to live in the U.S. routinely ranks such criteria as clean water and clean air high on the list, along with proximity to lakes, mountains, and rivers. Drawn by these environmental values, many of which are associated with the public lands, companies and individuals are moving to the West.

The *DEIS for Riparian and Aquatic Habitat Management in the Farmington Field Office – New Mexico* (BLM 1999) analyzed three alternatives for improving and protecting the riparian habitats included in this HMP. On the basis of that analysis, the Adaptive Management Alternative was determined to be the most effective approach for realizing the benefits of riparian habitat management. Therefore, adaptive management is the basis for the riparian and aquatic habitat management strategies prescribed in this HMP.

6 PUBLIC AFFAIRS

The following actions have been or will be taken to facilitate public awareness of the Farmington Field Office Riparian and Aquatic HMP:

- Notice of Intent to prepare the Farmington Riparian and Aquatic Habitat Management EIS was published in the *Federal Register* on October 30, 1998.

- Public Scoping Meetings were held in Cuba, New Mexico, November 17, 1998, and in Farmington, New Mexico, November 18, 1998.

- Copies of the scoping summary reports were mailed to everyone who expressed an interest in receiving them on February 1, 1999.

- Information about the riparian and aquatic habitat management planning process was posted at www.nm.blm.gov in March 1999.

- Copies of the *DEIS for Riparian and Aquatic Habitat Management in the Farmington Field Office – New Mexico* were mailed October 8, 1999, to everyone who expressed an interest in receiving them.

- A public hearing was held in Farmington, New Mexico, November 18, 1999.

- Copies of the Final EIS and Habitat Management Plan were mailed by October 2000 to everyone who expressed an interest in receiving them.

- A news release was issued in October 2000 to announce completion of the Farmington Riparian and Aquatic HMP.

- The New Mexico BLM Web site regarding the status of the Farmington Riparian and Aquatic HMP was updated in October 2000.

- A Presentation Kit for use in fiscal year 2001 and beyond was prepared to describe the significance of riparian habitat and what the BLM is doing to improve and protect it in the Farmington Field Office.

7 COSTS AND FUNDING

Table 3.2 identifies the steps to be taken for improving and protecting all of the specified riparian and wetland areas in the Farmington Field Office. These steps are the basis for defining the more specific work required for accomplishing the necessary improvement and protection of each area. As the work elements identified in Table 3.2 are defined site-specifically for projects in each riparian area, cost estimates will be developed for budget formulation and justification. However, that level of project specificity and detail is not included in this HMP.

8 CONCURRENCE AND RECOMMENDED APPROVAL

This Proposed Habitat Management Plan has been prepared, reviewed, and approved by the undersigned parties.

Prepared by:

Robert Moore 6/13/00

Bureau of Land Management
Farmington Field Office

Date

Approved by:

6/13/00

Field Office Manager
Bureau of Land Management
Farmington Field Office

Date

9 REFERENCES

BLM: See U.S. Bureau of Land Management.

U.S. Bureau of Land Management, 1981, *6780-Habitat Management Plans*, U.S. Department of the Interior, Bureau of Land Management, New Mexico State Office, Santa Fe, N.M., Dec.

U.S. Bureau of Land Management, 1984, *Simon Canyon Final Recreation Area and Management Plan,* Farmington, N.M., Sept.

U.S. Bureau of Land Management, 1987, *San Juan Basin River Habitat Management Plan,* NM-016-WHA-T4, Farmington, N.M., Jan.

U.S. Bureau of Land Management, 1988, *Farmington Resource Management Plan*, Albuquerque District, Farmington Resource Area, Farmington, N.M., July.

U.S. Bureau of Land Management, 1989, *Inventory and Monitoring of Riparian Areas,* TR 1737-3, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1990, *Riparian and Wetland Classification Review*, TR 1737-5, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1992a, *Management Techniques in Riparian Areas*, TR 1737-6, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1992b, *Manual Transmittal Sheet: 1737-Riparian-Wetland Area Management*, U.S. Department of the Interior, Bureau of Land Management, Dec.

U.S. Bureau of Land Management, 1992c, *Procedures for Ecological Site Inventory — with Special Reference to Riparian-Wetland Sites,* TR 1737-7, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1993a, *Greenline Riparian-Wetland Monitoring,* TR 1737-8, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1993b, *Palluche Canyon Riparian Activity Plan, Farmington, New Mexico,* Farmington, N.M., March.

U.S. Bureau of Land Management, 1993c, *Process for Assessing Proper Functioning Condition*, TR 1737-9, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1993d, *Pump Canyon Riparian Activity Plan,* Farmington Field Office, Farmington, N.M., March.

U.S. Bureau of Land Management, 1994a, *Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas,* TR 1737-11, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1994b, "Results of the FY 94 PFC (Proper Functioning Condition) Riparian Inventory," memorandum from Wildlife Biologist 07427 to District Manager 07016, Farmington, N.M., Nov.

U.S. Bureau of Land Management, 1994c, *The Use of Aerial Photography to Manage Riparian-Wetland Areas*, TR 1737-10, U.S. Department of the Interior, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1996a, *Observing Physical and Biological Change through Historical Photographs*, U.S. Department of the Interior, TR 1737-13, BLM Service Center, Denver, Colo.

U.S. Bureau of Land Management, 1996b, *Using Aerial Photographs to Assess Proper Functioning Condition of Riparian-Wetland Areas,* TR 1737-12, U.S. Department of the Interior, BLM National Applied Resource Sciences Center, Denver, Colo.

U.S. Bureau of Land Management, 1997a, *Grazing Management for Riparian-Wetland Areas,* TR 1737-14, U.S. Department of the Interior, BLM National Applied Resource Sciences Center, Denver, Colo.

U.S. Bureau of Land Management, 1997b, *Lower Largo Canyon Watershed Management and Erosion Control Plan Final*, Farmington Field Office, Farmington, N.M., April.

U.S. Bureau of Land Management, 1997c, *Public Records from Public Lands*, U.S. Department of the Interior, Bureau of Land Management, Washington, D.C.

U.S. Bureau of Land Management, 1998a, *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas*, TR 1737-15, U.S. Department of the Interior, BLM National Applied Resource Sciences Center, Denver, Colo.

U.S. Bureau of Land Management, 1998b, *Southwestern Willow Flycatcher Habitat Management Plan*, Farmington Field Office, Farmington, N.M., April.

U.S. Bureau of Land Management, 1998c, *Standard Checklist for Riparian Functional Condition*, Farmington Field Office, Farmington, N.M., July.

U.S. Bureau of Land Management, 1999, *Draft Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Farmington Field Office – New Mexico,* BLM/NM/PL-99-014-1040, Farmington Field Office, Farmington, N.M., Oct.

GLOSSARY

Allotment: An area of land designated and managed for grazing of livestock.

Animal Unit Month (AUM): The amount of forage necessary to sustain one cow and one calf or their equivalent (e.g., five sheep or goats) for one month.

Area of Critical Environmental Concern (ACEC): An area established through the planning process, as provided in the Federal Land Policy and Management Act, where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and afford safety from natural hazards.

Browse: As noun: That part of the leaf, twig, fruit growth of shrubs, woody vines, and trees that is available for animal consumption. As verb: To consume browse.

Contiguous: In close proximity, neighboring, adjoining, near in succession, in actual close contact, touching at a point or along a boundary, bounded or traversed by.

Diversity: The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Ecosystem: A complex, self-sustaining natural system that includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

Endangered Species: Any species in danger of extinction throughout all or a significant portion of its range.

Environmental Impact Statement (EIS). A document that is prepared to analyze the impacts of a proposed project or action on the environment and is released to the public for comment and review. An EIS must meet the requirements of the National Environmental Policy Act and the Council on Environmental Quality and the directives of the agency responsible for the proposed project or action.

Federal Land Policy and Management Act of 1976 (FLPMA). Public Law 94-579, signed by the President on October 21, 1976. It establishes public land policy for the management of lands administered by the U.S. Bureau of Land Management (BLM). It specifies several key directions for the BLM, notably (1) management on the basis of multiple use and sustained yield; (2) preparation of land use plans to guide management actions; (3) public land management for the protection, development, and enhancement of resources; (4) public land retention in federal ownership; and (5) incorporation of public participation in reaching management decisions.

Field Office: The smallest administrative subdivision of the U.S. Bureau of Land Management (formerly called Resource Area).

Forage: All browse and herbaceous foods that are available to grazing animals.

Forb: Any herbaceous nonwoody plant that is not a grass or grasslike plant.

Habitat: A specific set of physical conditions that surround a single species, group of species, or large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

GLOSSARY

Habitat Management Plan (HMP): A written and officially approved plan for a specific geographical area of public land that identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

Impact: The effect, influence, alteration, or imprint on the natural or human environment caused by an action.

Lentic: Standing water riparian habitats, such as lakes, ponds, or playas.

Lotic: Moving water riparian habitats, such as rivers, creeks, or springs.

Monitoring: Orderly process of collecting, analyzing, and interpreting resource data to evaluate progress toward meeting management objectives.

Multiple Use: A combination of balanced and diverse resource uses that considers long-term needs or renewable and nonrenewable resources, including recreation, rangeland, timber, minerals, watersheds, and wildlife, along with scenic, scientific, and cultural values.

Physiographic Province: An extensive region of similar geological structures and climates that share a common geomorphic history. It normally encompasses many hundreds of square miles and portrays similar qualities of soil, rock, slope, and vegetation.

Public Land: Any land or interest in land (outside of Alaska) whose surface and/or subsurface is owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management.

Rangeland: Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grasslike plants, forbs, or shrubs.

Rangeland Improvement: Any activity or program on or relating to rangelands that is designed to improve production of forage, change vegetation composition, control patterns of use, provide water, stabilize soil and water conditions, or provide habitat for livestock or wildlife.

Resource Management Plan (RMP): A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The RMP planning system has been used by the U.S. Bureau of Land Management since 1980.

Riparian Area: A unique form of wetland that represents the transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with rivers and streams, glacial potholes, and shores of lakes and reservoirs with stable water levels are typical riparian areas.

Stream: General term for a body of water flowing in a natural channel, as distinct from a constructed channel such as a canal or irrigation ditch. Streams in natural channels and point sources, such as springs and seeps, are classified as either being perennial, intermittent, or ephemeral. These water regimes are defined as follows:

- *Perennial* — A stream or water point source in which there is an uninterrupted surface or subsurface flow of water. Perennial waters are directly associated with a water table in the localities through which they

flow. These areas generally maintain a vigorous presence, or high potential for riparian vegetation.

- *Intermittent (= Semiperennial/ Semiephemeral)* — A stream or water point source in which the flow of surface or subsurface water is regularly interrupted for a period of days to months. Semiperennial sources have shorter periods of interruption, days to weeks, and semiephemeral sources have no-flow periods of weeks to months. These areas maintain a variable amount of riparian vegetation. The vegetation may become restricted to very limited and discontinuous areas. These areas are generally more sensitive to disturbance and excessive use.

- *Ephemeral* — A stream or water point source that flows only in direct response to precipitation. The channel or point of exit is permanently above the local water table. These areas generally cannot, nor do they have the potential to, maintain riparian vegetation.

Watershed: The total area above a given point on a waterway that contributes runoff water to the stream flow at that point.

Wetland: Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support and that, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wildlife: All species of mammals, birds, invertebrates, amphibians, reptiles, or their progeny or eggs that, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.